L. & M.
9,000-8-8-

Local & Munl. (1896) Departmen

MISCELLANEOUS.

G.O., No. 75 M

DATED 16th January 1896

[Despatch Abstract.]

Water supply.

Requesting the Sanitary Board to consider certain schemes regarding the ---- of Tuticorin now put forward and to submit its proposals at an early date.

BACK PAPERS.

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

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.
	C c	No 710 No 738	M 96 M 96				

80/14/2/4

From

J. A. JONES, Esq., MEM. INST. C E., F.R.S E.,

Santary Engineer to Government,

To

THE CHIEF SECRETARY TO GOVERNMENT,

Local and Municipal Department.

Sir,

TUTICORIN WATER SUPPLY.

I have the honor to forward the following report and plans and estimates for the construction of Water Works at Tuticorin.

2. **Existing Works**—Tuticorin is at present supplied from the Korampallum Tank through a channel which owing to the nature of the soil with which it is constructed passes on to the Town about 16 o/o only of the water-delivered at its head. The water delivered at Tuticorin falls into a small circular reservoir (shewn on plan No 5) whence the water is carried by underground earthern pipes to sunken wells, and delivered into them considerably below ground level; generally these wells admit also brackish water so that the supply to the town is at present not only imperfect but of bad quality. During the hot weather the water is not fit to use though people are forced to do so. I have not made reference to the relative levels of the tank reservoir and town as these will be given and referred to later on in this report.

3. In my No 1837 of 30th November 1891 I have gone fully into the history of the tank and I briefly sketched out the main points of design for an improved scheme.

4. About that time the Superintending Engineer put forward certain proposals which were laid before the council and as to these I agree with the remarks made by Mr. Harvey a member of the Tuticorin Council. His letter is attached.

5. There is also Mr. Harvey's plan of a reservoir at Tuticorin fed by means of a pipe from the tank and so that the varying level of the tank will be obtained in the reservoir. Such a pipe would reqnire to be of iron to stand the muximum pressure and to deliver the maximum supply at the lowest tank level and would require to be of large size and would cost not less than Rs 2,72,000 plus Rs 14,960 for laying and in the end the water could not be distributed in any other manner than it is at present.

6. A third plan was proposed by the Chief Eagineer for Irrigation Vide G. O. P. W. D. (Irrigation Branch) dated 5th April 1892 No 1772 C, in which pumping is proposed at the

Statement showing lowest level of Surface of tank or least depth of water at sill of lowest sluice in Korampallam Tank in each month since the construction of dam.

Years.	January.	February	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Remarks.
1889	9·55	6·70	4·40	5·70	4.10	2·55	1·25	2.10	1·70	5·60	6·35	4·60	**Note**—The Municipality was supplied with water from April to 8th June 1892 & from 14th March to 19th July 1893 (information given by the Chairman).
1890	2·30	1·50	...	...	...	...	...	...	...	0·60	3·80	6·75	
1891	3·65	2·70	4·50	4·80	...	...	1·15	2·80	0·85	4·40	4·20	5·55	
1892	8·85	6·45	7·10	3·25	...	1·90	1·60	...	...	...	1·10	...	
1893	...	...	7·15	5·20	...	5·80							

N. B.,—The level of the Tuticorin supply sluice sill 2'—0" above the sill of the sluice at which these readings were taken. The full tank level which is also maximum water level is 10 feet above sill of the lowest sluice and 8 feet above the sill of the Tuticorin supply sluice.

---

14. It is not likely that a decreased delivery to Tuticorin will much affect the level of the tank because probably a large portion of that wasted in the supply channel would otherwise be passed to surplus during a portion of the year—if we could assure our selves that the tank would not under the improved conditions fall below the new sluice level no reserve tank would be necessary, but there is no assurance on this point and a reserve tank forms therefore a necessary portion of the project.

15. The population of Tuticorin was in

1881————16,281

1891————25,221

and for the purpose of this scheme it has been thought advisable to assume.

34,000 requiring an average of 15 gallons per head daily.

16. The design for the reserve tank shews that it is situated close to the present supply channel to Tuticorin. The area proposed for the tank is 1,200,000 Sqr. ft. or 27·5 acres and the capacity of the tank will be 12,000,000 C. feet or 75,000,000 gallons. It has been assumed that the tank will be full (vide chief Enineer's letter quoted above) and hence the reserve tank full in December in each year, that the water from it would be required during May, June, July and August. Before the water was required there would be lost by evaporation at 5" per month

Months area ft

5/12 × 4 × 1,200,000 × 6¼ = 12,500,000

leaving in the tank 62,500,000

Total 75,000,000

This amount for 34,000 people at 15 gallons per head per day represents a supply ... ... 147 days

(less evaportion) for ... ... 220 days

or at 10 gallons per head for ... ... 200 days

For the present population of 25,000 at 15 gallons ... ... 200 days

10 gallons ... ... 300 days

17. I have put the figures in this form because the statistics of the tank just received shew the most remarkable variations one month with another and that the issues in some of the dry months when there can be little if any cultivation have been considerable and it is there fore impossible to say for how many months the reserve water will be drawn upon It is presumed however that if this scheme is executed some rules will issue as to the necessity for keeping the water above the Tuticorin, new sluice as long as possible and for restricting issues for irrigation when necessary If the reserve tank is found not to be large enough there is no difficulty in extending it at any time and the cost of the tank now proposed is already great The latest infornation given by the Chairman of the Municipality is that water was supplied between April and the 8" June 1892 and 14" March to 19th Jnly 1893; from 8" June to 14" March is 9 months and if a tank to store 9 months supply is a necessity the cost of the reserve tank will be largely increased.

18. This is a matter which however can be settled only by careful consideration in the Public Works Department because I believe that with proper regulation of the tank and

keeping in view the necessities of Tuticorin the issues for irrigation may be limited or stopped when the tank falls to a certain level, indeed to go a step further it may be well if it can be considered whether it woulnot be advisable for the Tuticorin Municipality to pay an annual extra sum to Govermant for water diwerted from irrigation instead of constructing a reserve tank at all I am not however in possession of such information as will allow me to make definite proposals in this matter.

19. The Reserve tank it will be observed is intended to be filled up as the main tank fills and the water received will be retained at its highest water level until it is no longer possible to draw a supply from the main tank into the conduit to Tuticorin The tank is proposed to be formed of simple banks without pitching; the slopes are 2½ to 1 both inside and out with a puddle wall in the centre. The soil is sandy and there is no economy to be obtained by making the banks with steeper slopes as sand hills and other excavation in the bed of the tank give the quantity of earth sufficient to make the banks of the section proposed. The banks will be *turfed* and the top of the bank will be 4 feet above the maximum water level of the tank. An existing irrigation sluice will be altered and used to fill the reserve tank and forms the communication between it aud the main Korampallum Tank. A new irrigation sluice is provided (vide plans 2 and 3). The existing Municipal sluice which is 2 feet higher than the irrigation sluice will be lowered to that extent, and from the reserve tank a similar sluice will admit the water to the head of the conduit (see plan No 4).

20 The conduit itself starts at the new level of 9·40 (the present sluice is at 11·40 above M. S.L.) and has for its whole length a fall of 1 in 10000 The bottm of the conduit, follows very closely the gradient of the bottom of the present channel but is slightly lower so as to get the Masonry work in solid ground. The whole length of the conduit is 22,100 feet The conduit is circular in cross section with an internal diameter of 1 feet 9 inches It will be constructed with one ring of brick work and surrounded by concrete 6 inches thick at sides and bottom and 2 inches at top.

21 On entering the outskirts of Tuticorin the conduit instead of continuing to the present service reservoir which is an open one 60 feet in diameter and 6½ feet deep below F. S. L. turns northward on to land adjacent to the road to 1700 feet where land at a suitable level and of sufficient area is to be had on which to erect the filter beds, service reservoir and Engine House (vide drawings sheet Nos 5 and 7)

22. The filter beds are four in number (one will always be out of use for cleaning) three filter beds with an area each of 2800 square feet and an aggregate area of 8400 square feet will be capable of filtering the total supply of 510000 gallons daily at a rate not exceeding 546 gallons per square yard per 24 hours about the usual rate now adopted (4. 8" in depth per hour) see Sheet No 8

23. From the filter beds the water will pass to the compensating reservoir of which the dimensions are 97·6 80·6 10 & holds about 400,000 gallons or 2/3 ds of a days supply which is sufficient to compensate for the difference between the maximum demands and average supply.

24. The water from the service reservoir passes to the pump well the maximum water level of which will be 36·26 below datum.

25. The Engine House is over the pump well and is of simple design. It is proposed to supply it with Triple Expansion Worthington Engines and Pumps. To ensure that the water will be deliverd when under the maximum draught with a pressure of not less than 10 feet at any portion of the town requires the water to be raised at a maximum from 6·26 to 30·00 or 36·26 say 37 feet in all.

26 The pump H. P. required is therefore

$$\frac{\overset{\text{maxgalls supplied}}{722\times37\times10}}{33000}=9\text{ P. H. P.}$$

Economy in this instance would not be served by adding 50 o/o to the H P and then having 3 engines of 4½ P. H. P. each The cost of such engines per H. P. being great as compared with larger power it is therefore proposed to have two engines of 9 H. P. so that there will always be one engine in reserve.

27. The streets and portions of the town proposed to be supplied with water are shewn in sheet No 11 The pipe lines can be supplemented at any time. At present it is proposed to erect 38 fountains or one for each 700 people (on present population) and each fountain will have a delivery of 19 to 20 gallons per minute.

28. Such briefly is the scheme I propose for Tuticorin.

29. It is always well to carry out a scheme complete at first if possible. Whether Tuticorin can do so or not is problematical.

30 There are however certain portions which cannot be omitted if Tuticorin is to have a proper supply. It may be possible to omit the reserve tank but not unless the supply is more assured than at present though temporary machinery might for a time raise water into the conduit as long as there was water in the tank The filters might be omitted but the servicer reservoir cannot be so without enlarging the conduit so that it would be equal to the maximum demand instead of the average. I do not recommend the above omissions and am not sure that the former is advisable, any further portions of the scheme should I think be carried out at first.

31. I shew the total cost under two conditions (1) for complete scheme (2) for the resever tank and filters omitted for the present.

32 The cost of pumping for the present population at 10 annas per 1000,000 gallons raised 1 foot high will amount to Rs 3,200 other probable charges have been added in the following estimate in which in both cases I have presumed that Goverment will contribute a moiety.

Complete scheme.

Interest & Sinking fund for Rs 159 355 at 5·96 percent	Rs ...	9498
Staff at Head works	... ...	864
Cleansing filter &c	... ...	1500

Abstract of Detailed Estimate No. 8, dated 27th July 1893, for the construction of Water Works for the town of Tuticorin.

Quantity.	Description of Work.	Rate.			Per	Amount.			TOTAL.		
		RS.	A.	P.		RS.	A.	P.	RS.	A.	P.
	Constructing outlet pipes and valve house at the head of masonry conduit ...					6,605	0	0			
	Alterations to the existing irrigation sluice					1,200	0	0			
	Constructing the irrigation sluice ...					2,147	0	0			
	Reserve Tank					22,403	0	0			
	Outlet pipes and valve house in the Reserve Tank					4,977	0	0			
	Masonry conduit					44,472	0	0			
	Filter bed					32,886	0	0			
	Clear-water reservoir					26,219	0	0			
	Engine and boiler house					7,987	0	0			
	Wood and storeshed					2,000	0	0			
	Compensation for land, Fencing &c ...					12,162	0	0			
	Engine, Pumps and Boilers					30,600	0	0			
	Supply and delivery of pipes					69,480	0	0			
	Laying and jointing pipes					14,000	0	0			
	Contingencies and cost of establishment.					41,572	0	0			
	Grand Total of Estimate ...								318,710	0	0

OFFICE OF SANITARY ENGINEER TO GOVERNMENT,
Fort St. George, 27—7—1893

(Signed) J. A. JONES,
Sanitary Engineer to Government.

THE CHAIRMAN,

Municipal Council,

TUTICORIN.

1st. May 1892

SIR,

Referring to correspondence with Col. Fraser anent water supply to the Town of Tuticorin, I observe that he proposes to force a supply of water through a 12" iron pipe from the Korampalam Tank to the Reservoir outside the Town by the aid of a Steam Engine and at times, of a-turbine.

Touching the turbine-as no fall exists at Korampallam he proposes to draw off water at the surface of the tank *when it is full* by a 2 feet square opening, using 2000 cft per minute to drive the turbine. He adds "this supply might be easily spared from the tank" The water after it leaves the turbine would of course run away and be lost to the tank. The mumber of days in a year when the tank is full *and overflowing* are not many, and it is evident that at all other times when the turbine was at work the loss of water would be 2000 cft per minute. Such a loss of water I fear neither the Government nor the Municipality would be justified in sanctioning-hence I do not consider that a turbine is necssary. If a high fall were available and consequently only a small supply of water necessary the case would be different.

Touching a Steam Engine. It appears from the correspondence that the present channel has a fall of 4 ft. in its entire length and I am informed that the sill of the sluice that supplies the Town is 2 ft- 6" above the bed of Korampallam tank, it follows therfore that the bed of the channel at the Town is 1 ft- 6 inches below the bed of the Tank. That being the case I do not see the necessity for a pumping Engine at all since the water will *flow* into the Town from the *lowest part* of the bed of the tank. I propose therefore that an iron pipe say 12 to 15 Inches diameter be laid from the *lowest part* of the bed of the tank at *that level* alongside the present channel to the reservoir near the Town. The walls of this reservoir I would raise to somewhat *above* the level of the overflow of the Korompallam Tank when full. It is evident that the water in the reservoir would stand at the same level as the surface of the tank at Korambolam. From the reservoir the water could be drawn off by sluices to supply the various sections of the Town and as it was drawn off it would come in from the tank, the head of pressure avaiable being that due to the height of water in the tank at any given time I belive this would be enough always to give a *sufficient supply* to the Town. But in order to reduce friction I mention a *larger* pipe than that proposed by Col. Fraser. *The extra* cost of such a pipe would be much less than cost of boiler Engine and turbine, while in addition, if the plan I advocate, were adopted no charges for fuel, staff, up keep of machinery, &c &c would be incurred.

To put my proposal briefly I would ask you to refer to sketch accompanying Col. Fraser's letter to you, of the 23rd January 1892. The well he there shows, I would simply construct near *Tuticorin* instead of outside the tank bund, and extend the inlet pipe from the tank so that it reached all the way to the well at Tuticorin and thus dispense with boiler Engine and, or, turbine.

I have the honor to be
Sir,
Your Most Obedient Servant.
(Signed) F. HARVEY.

P. S.

The more I consider the turbine proposal the more am I convinced of its inapplicability not to say absurdity. "Only 2000 c-ft per minute" would be riquired to drive it, according to Col. Fraser's letter of 26th January. But has he calculated that 2000 c-ft per minute is roughly over seventeen million gallons per day or the water supply to a city say twice the size of Madras

Again the pump he proposes is to deliver 60 c-ft per minute at the town while 2000 cft per minute is to be expended, at the tank by the turbine in doing so. I hope the copies of Col. Fraser's letters supplied to me are correct.

(Sd) A. F. H.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

MEMORANDUM.

Dated Madras, 29th November 1893.

Note by the Chief Engineer for Irrigation No. 60 w dated 1st November 1893:—

With reference to endorsement from the Joint Secretary to Government P. W. D. General, Buildings and Roads Branch, No. 3318 C dated 11th October 1893 the undersigned has the honor to say that arrangements for working the waste weir shutters at the Korampallam Tank in a more satisfactory manner, will be in operation long before the scheme for supplying Tuticorin with water from this tank now submitted by the Sanitary Engineer is carried out. By these arrangements there is every likelihood that water can be held up in the tank to F. T. L. during the North East Monsoon and as the excess amount thereby pounded will amount to 125 millions cubic feet or five times the total annual requirements of the Tuticorin of the future, the undersigned has no objection to raise against the present proposals of the Sanitary Engineer to take his supply for the town from this tank. Should it be necessary in the interests of the town that the irrigation in any year need be restricted, a similar course can be followed as is now pursued under the Red Hills Tank in connection with th Madras Water supply. With the help of the storage reservoir proposed however, there is no probability of such a contingency occurring.

Note by the Chief Engineer P. W. Department dated 27th November 1893:—

The Chief Engineer for Irrigation in his note No. 60 W, dated 1st November 1893 having stated that he has no objection to raise against the proposals of the Sanitary Engineer, they may be approved. It is considered that the complete scheme to cost Rs 3,18,710 should be adopted, but as it has not been conclusively shown that the reserve reservoir is indispensably necessary, it might be omitted should there be any difficulty in providing funds for the complete scheme. The filter beds should be retained in any case.

The remarks of the Sanitary Engineer in para 4 of his letter No. 1538 dated 27th July 1893 condemning the propssals of the Superintending Engineer VI circle cannot be endorsed as the proposals have not been submitted. But Mr. Jones is under a misapprehension in supposing that the water required for working the turbines would be lost. It would of course be utilised for irrigation purposes.

Many of the rates entered by the Sanitary Engineer are in excess of those at which similar work would be executed by the P. W. Department.

i. T

14

The following are some of them:—

Puddling	3—8—0	against	0-14—0.
Plastering	3—8—0	,,	3—0—0.
Cement Plastering	12-10—0	,,	6—8—0.
Sunkki Do	5—0—0	,,	3—8—0.
Teakwood	3-10—0	,,	3—8—0.
Batten doors	1—8—0	,,	1—2—0.

Transferred to the Local and Municipal Department with reference to its endorsement No. 511 dated 4th August 1893, herewith returned with enclosures.

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

TUTICORIN WATER WORKS.

Puddling.

1 Cubic Yard Puddle	Rs A. P.
½ Man cooly	0—1—6
2 Boys	0—3—0
Cartage 2 Miles	0—4—0
Sundries	0—6—0
...	0—0—6
For Cubic Yard	0-15—0
For 100 Cubic feet	3—8—0

Plastering with Chunam.

Rate as per schedule	3—0—0
Cartage for sand and lime 5 miles	0—8—0
For Sqr.	3—8—0

Cement plastering $\frac{3}{4}$" thick.

$3\frac{1}{8}$ Cubic feet cement	5-11—6
$6\frac{1}{4}$ do sand	0—3—0
2 Bricklayer	1—0—0
2 Men cooly	0—8—0
2 Women	0—4—0
4 Boys	0—6—0
Sundries	0—1—6
	8—2—0

15

W. schedule
resumed

Cement plastering $\frac{1}{4}$" thick.

1 1/24 Cubic feet Cement	2—0—0
2 1/12 do sand	0—1—0
1 Bricklayer	0—8—0
1 Man	0—4—0
4 Boys	0—6—0
Sundries	0—1—0
	3—4—0

Teak Wood.

Rate as per schedule	3—8—0
Cartage 5 miles	0—2—0
For c-ft,	3-10—0

Batten Door.

The rate allowed in the D. P. W. schedule varies from I—4—0 to 1—12—0 hence average rate of Rs 1—8—0 was allowed.

(Signed) J. A. JONES,
Sanitary Engineer to Government.

From

J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E.,
SANITARY ENGINEER TO GOVERNMENT,

To

THE CHIEF SECRETARY TO GOVERNMENT,
Local and Municipal Department.

SIR,

In regard to reference No. 871 of 7th December 1893 I have the honor to remark as follows.

16

i. T

The f-he Chief Engineer proposes that the complete scheme be adopted but that if funds cannot be provided for the complete scheme the reserve reservoir might be omitted. As the Chief Engineer for Irrigation seems to promise that a full supply for Tuticorin can be maintained in the tank, this might be done as the reserve reservoir can be added at any time.

ii. The cost of the scheme without the reserve reservoir would be thus:—

	Rs	Rs
Cost of complete scheme		319430
Deduct contingencies &c		41,663
		2,77,767
Deduct alteration to existing sluice	1200	
do cost of reservoir	23028	
do constructing the irrigation sluice	2147	
Outlet pipes & valve house in reserve tank	4977	
		31,352
		2,46,415
Add contingencies & cost of establishment		36,962
		2,83,377

iii. The annual charge would amount to

	Rs
Interest and sinking Fund on (moiety) Rs 1,41,688 @ 5·96 o/o	8,444
Staff at Head Works	894
Cleansing Filters	1,500
Cost of pumping	3,200
Other Engine House Charges	1,000
Cost of maintenance of pipes	1,832
Total	16,840

2, With reference to the question of rates I have to report as follows;—

Puddling—Details are given in the accompanying statement; from enquiries made it was understood that clay for puddle could not be obtained within two miles of the tank hence 6 annas

---

Extract from the Proceedings

17

per yard was entered for cartage. The D. P. W. schedule rates vary from Rs. 1—8 to 14 annas but it is presumed the cost must be higher when clay has to be carted.

Plastering—The rate of Rs 3/8 is entered for work at the tank (5 miles cartage for Tuticorin.) and the D. P. W. Schedule rate 3/. for work in the town.

Cement Plaster—The rate depends on the thickness proposed and the material on which it is applied—the rates entered is the contract rate at Madura viz 12/. (Rs 12/10 at Tank for cartage). If cement can be eventually landed in Tuticorin at the same cost as the Madras the rates may be reduced to those given in the attached schedule. The D. P. W. rate given must be for ½"plastering.

Surki— Good surki will be difficult to obtain in Tuticorin and hence the high rate entered.

Teak Wood—The rate of Rs 3—10—0 referred to is for work at the tank —the rate entered for Tuticorin is the D. P. W. rate of Rs 3—8—0; there is only Rs 163 of work altogether at Rs 3/10

Batten Doors—The D. P. W. schedule rates are from Rs 1—4—0 to Rs 1—12—0; the average rate is entered in the estimate.

I have the honor to be
Sir,
Your Most Obedient Servant.

(Signed) J. A. JONES,
Sanitary Engineer to Government.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read again Go. dated 1st September 1893 No 1155 M Mis Read also the following papers:—

From the Sanitary Engineer to Government, dated 27th July 1893 No 1538 forwarding his report, plans and estimates for the Tuticorin Water Supply Scheme.

From the Public Works Department, dated 29th November 1893 No 4033 C transferring notes by the Chief Engineer for Irrigation and by the Chief Engineer P. W. Department on the Tuticorin Water Supply Scheme.

From the Sanitary Engineer to Government, dated 16th December 1893 No 2701, submitting his remarks on notes by the Chief Engineer for Irrigation and by the Chief Engineer P.W.D on the above subject.

Order 14th February 1894 No 159 M mis.

The papers will be communicated to the Chairman of the Municipal Council, Tuticorin with the request that he will ascertain definitely what contribution the South Indian Railway Company is prepared to give either as a lump sum or as an annual payment, and report how the Council proposes to finance the Scheme on the understanding that the Government will grant not more than half the total cost.

(True Extract)

LIONEL DAVIDSON.
Ag asst Secretary.

True copy

J M B Roche Victoria
Chairman

4/2514 M of 95

Ex 6
7/5/95

Extract from the Proceedings of the Municipal Council Tuticorin in their meeting held on Friday the 28th June 1895.

Present

M.R.Ry J. M. B. Roche Victoria avergal Chairman
" J. L. Motha avergal
" P. Veeravagu Pillai avergal
" T. M. Ramakristnasami Nayadu Garu
" M. Shanmugam Pillai avergal
" S. K. Mohidin Kadir Shah Maracayar avl
" R. M. Annamalai Nayadu Garu
" Revd C. P. Gnanakan B. A

x x x

3. Read Tuticorin Watersupply Scheme and Estimates, prepared by Mr. Chester Local Fund Engineer.

Resolved that the Scheme and Estimate of Mr. Chester be forwarded to Government in continuation of the resolution of the Council dated the 7th instant which has been already forwarded.

x x

Sd J. M. B. Roche Victoria
Chairman

True Extract

J M B Roche Victoria
Chairman

4/7

5/2514 M of 95

Sany: Ev 5/7/8/95

No 296 Municipal Councillor's Office
Tuticorin 10th July 1895

From.

M. R. Ry. J. M. B. Roche Victoria
Avergal Chairman
Municipal Council
Tuticorin

To

The Chief Secretary to Government
Fort Saint George
Madras.

Sir,

Under a resolution of the Council dated 28th June last, copy of which is enclosed, I have the honour to submit herewith, for consideration by Government, a third scheme of water supply to this town which Mr. Chester, District Engineer, Tinnevelly, has kindly prepared & which was forwarded to the Council by the Collector.

2. The estimates and a set of tracings and plans in connection therewith are enclosed.

3 In my opinion the simplest scheme with abundance of good water is always good considering the circumstances of the town.

I have

21

I have the honour to be

Sir,

Your Most Obedient Servant

J. M. Rocha Victoria

Chairman

Current No. 1119 1895
Dis

22

From

The Chairman
Municipal Council
Tuticorin

1316
R. 5.
1st Clerk

To

The Chief Secretary
to Government
Fort Saint George
Madras
through the Sub Collector & Collector

J. A. [illegible]
13 JUL. 1895
INDIAN CIVIL S[illegible]

Dated 10th }
Despatched 11th } July 1895
Received }

No. 296
Enclosure. Three

Submitting for
Consideration a water
Supply Scheme
prepared by Mr. Chester
Local Fund Engineer
Tinnevelly

6
25/14 [illegible]

Secy =
Ex 4
7/5/95

N

~~Forwarded.~~

The matter is not a simple one & I believe Mr. Chester has had no previous experience in such matters. The scheme may be put before the Sanitary Board for consideration.

J. [illegible]
Collector
20.7.95.

DESPATCHED.
20 JUL. 95

[illegible]
Get the [illegible]
enclosed
[illegible]

RECEIVED
22 JUL. 95
LIONEL VID[illegible]

From

M. R. Ry. J. M. B. Roche Victoria avergal
Chairman, Municipal Council
Tuticorin

To

The Chief Secretary to Government
Fort St George. Madras.

Sir,

I have the honour to submit a Copy of my motion to the Council together with a Copy of the resolution of the Council approving the said motion anent water supply to this town.

2. The motion contains all that is wanted to meet the bare necessity of the water supply, and requires no additional comments on the subject. The present scheme which is simple and economical is only a beginning of the elaborate scheme organized by Mr. Jones, Sanitary Engineer to the Government of Madras, and is based on the

same view taken by him. Considering the present financial position of this Municipality.—

3.— I therefore request you to be pleased to move His Excellency to favorably consider the matter and sanction the proposal which will be considered as a special standing boon conferred on this Municipality calculated to perpetuate the memory of the regime of His Excellency Lord Wenlock.

I have the honour to be
Sir,
Your most obedt Servt
J. M. Roche Victoria
Chairman

1514

Tuticorin Water-Scheme

To
The Municipal Councillors
Tuticorin

Gentlemen,

Our town is increasing most rapidly year by year, both in commerce and in population, and also in importance; whereas our watersupply is getting worse and worse, consequently the miseries of the people are intolerable. In fact our present water-supply is simply disgraceful. I do not think that there can be a more important affair in the interest of the town than some kind of waterscheme which deserves the best attention & sympathy of the Government, the Municipal Council, and the public. Many Municipalities like ours had similar difficulties, and most of them have succeeded in establishing watersupplies to their town in a satisfactory manner with the support and pecuniary help rendered by Govt.

In our case His Excellency Lord Wenlock, has been very kind indeed to send down the Sanitary Engineer to the Government of Madras to get up a waterscheme to our town and Mr Jones has no doubt taken a good deal of trouble in organising one which you are all aware of. But unfortunately the scheme is a very big one costing more than 3 lacs of rupees, and therefore the Govt. declined to Sanction the Scheme at present owing to the Smallness of our finances. Its my humble opinion that a gigantic Scheme like the one proposed by Mr Jones is out of the way altogether for our town for the present. If the Govt. and our Municipality are going to wait until such time as will enable us to raise a loan of 150,000 Rs being half of the waterscheme and also to defray a permanent expense of Rs 18,000 a year, I am afraid it will take Some scores of years before it can be accomplished.

As one must cut one's coat according to the cloth, we must also launch in a waterscheme only according to our position. Mr Jones and other Engineers and everybody else are all agreed that the present enormous wastage taking place between Korampallam tank and our reservoir on account of the porous nature of the Soil should be put an end to. It has been found Some years ago that 84 per cent has been wasted on the way between Korampallam and our town. The wastage must now be much more enormous as there is hardly any clay to be found in the bed of the channel.

I shall therefore now proceed to lay before you, only a part and parcel of Mr Jone's Scheme & I trust that you will find it very Simple. practical and most essential.

The Scheme I propose is as follows:—

(1) To construct a masonry conduit according to the plan suggested by Mr Jones from Korampallam tank to our town with a few fresh water basins near our head Sluice.

(2) To lower our Head Sluice by 1½ feet as the present level will admit of doing So.

(3) To raise the bund of our reservoir at Melur So as to contain the Same height of water as the Korampallam tank.

(4) To lay cast iron pipes between our reservoir and the big circular well near the hospital

as the said well is most central in the town-

This scheme will cost only about one lac of Rupees, & besides saving more than 84 per cent of wastage will most probably supply the town with water all round the year. In course of time there is nothing to prevent Mr Jones or any other Engineers to have a reserve tank, filter beds, machinaries, fountains & tap system.

The above scheme supplies us with the main necessity of water, and after satisfying our actual wants we can gradually go in for additional improvements and luxuries. It may not be out of place to mention here that all our endeavours in this direction will be only a failure if the ryots of the Korumpallum tank taking advantage of this arrangement are allowed to draw away water preserved from wastage and impounded in the tank. For this purpose I would suggest that we address the Revenue authorities with a view to place some restriction over the cultivation of the lands in the tank. From the above you will see that we must arrive at some conclusion and take the scheme in hand at once and it will be most absurd and impolitic to put off our actual necessity until such time as will enable the Council to find funds for filter beds & other luxuries.

I may here mention that our Municipality has approached some Governors who visited this District such as Duke of Buckingham, Sir Monsheart Elphinstone Grant Duff, Lord Connemara & Lord Wenlock - and it is only the present Governor who gave some effect to the promise he made in reply to our address in connection with our town water supply. It was only through the sympathy of His Excellency Lord Wenlock that Mr Jones, Sanitary Engineer, was sent down to prepare a water scheme to our town and the Govt has promised to contribute 150,000 Rs being half of Mr Jone's Scheme.

The amount of the full scheme being too much for our town, the Govt seems to have put it off for the present, whereas the scheme which I have now laid before you, will, I trust, meet with the approval & Sanction of

Govt. As the Govt will contribute at least half of the cost of this scheme which will be about Rs 50,000, we will ask the Govt, either to lend us the remaining 50,000 Rs with reasonable interest as they have done to some other Municipalities or guarantee the loan. I dare say we can repay the loan by instalments in ten years at the rate of Rs 5,000 and interest. I fully hope that His Excellency Lord Wenlock will kindly order the Scheme to be taken up at once and thus bestow a great blessing to our town and especially to the suffering public before he leaves our shores after a glorious regime.

In conclusion, Gentlemen, I ask you to carefully consider what I have already stated and approve this simple, practicable and most fundamental water Scheme to our Town which as I have already mentioned is only a part and parcel of Mr Jones's Scheme and I fully trust that our Collector Mr. Higgins will strongly recommend our cause to the Government.

I have the honour to be
Gentlemen
Your most obedt Servt
Sd/ J. M. B. Roche Victoria
Chairman

(True Copy)

J M Roche Victoria
Chairman

5 / 25 14 M of 95

Sany: Ex 3 / 71 d/95

Extract from the Proceedings of the Municipal Council Tuticorin, dated Friday the 7th June 1895.

Present.

M.R.Ry. J. M. B. Roche Victoria avergal Chairman
" X. Mottu Fernandez avergal
" Phillip C. Mothe avergal
" T. M. Ramakistnasami Nayadu Garu
" S. Arumugam Chettiar avergal
" P. Viravagu Pillai avergal
" R. M. Annamalai Nayadu Garu
" S. K. Mohidin Kadir Shahu Maraicayar avergal.

× × ×

5. Read motion from the Chairman regarding Water supply Scheme.

The Council unanimously approve the motion of the Chairman and resolved that the Chairman address the Government on the subject.

× × ×

Sd/ J. M. B. Roche-Victoria
Chairman

(True Extract)

J. M. B. Roche Victoria
Chairman

Current No. 1006 / 1189
DEPT.

From

The Chairman
Municipal Council
Tuticorin

To

The Chief Secretary to
Government
Fort St George
Madras

J. A. CUMMING
28 JUN 1895
INDIAN CIVIL SERVICE

Dated 28
Despd 28 } June 1895
Recd

No. 275
Enc Two

Submitting a copy of the motion regarding the water supply scheme of this town & requesting the sanction of the proposal

Sany² Enc 2
7/7/95
9
2514 M of 95

---

overflow in the Channel.

The particulars of my estimates are as follows & they are mostly relied upon the data given by Mr. Jones. I may here mention that Mr. Jones' estimates are liable to reduction as will be seen from a perusal of the estimates prepared by Mr. Chester, District Engineer, whose scheme and estimates will be also forwarded to the Government in a day or two. I have, however, kept myself close to Mr. Jones' Estimates in order to be on the safe side.

Masonry Conduit from Korampallam tank to the Reservoir at Melur	Rs 44,000
Freshwater Cisterns alias Clearwater Reservoir	Rs 26,000
Cost of iron pipes 12" diameter to 3000 feet long to be laid in the Town from the Service reservoir @ Rs. 5 per foot.	Rs 15,000
Laying & Jointing pipes	Rs 1,500
Constructing Stand lines	Rs 2,000
Improvement to Melur reservoir	Rs 3,000
Contingencies & management	Rs 8,500
Total Rupees	1,00,000

I have the honour to be
Sir,
Your Most Obedient Servant

J. M. Roche Victoria
Chairman

189 5

Tuticorin Municipality.

From
The Chairman
Municipal Council
Tuticorin

To.
The Sub Collector of
Tinnevelly

Dated 10th
Despatched 11th July 1895
Received

J. A. CUMMING
11 JUL 1895

No. 295
Enclosure. Three

Sir, In reply to your Ref: on Current No. 1006/95 Mis: of the 8th instant, I beg to State that the four items of my proposals regarding Tuticorin water Supply form only a part of Mr. Jones' Scheme.

The fresh water basins near the Head Sluice are intended only to keep rubbish & Sediment from passing through the Conduit & not for Supplementing Storage.

The Conduit is Circular in Cross Section as per Mr. Jones' Scheme - Vide para 20 of his report, Copy of which is herewith enclosed. Consequently the water in Melur reservoir must be in level with that in Korampallam tanks and there Cannot be any

~~Forwarded.~~

These Suggestions may be laid before the Sanitary Engineer for opinion.

Anything is better than the present miserable supply, which is a disgrace to a town of the size of Tuticorin & returned

J. A. Cumming

20.7.95.

Local & Municipal Dept.
DESPATCHED.
26 JUL 95
CURRENT No. 2514 M

RECEIVED
22 JUL. 95
LIONEL VIBERT.

Endt on Curr No 1316/95 gen

Submitted to Government with the suggestion that the Sanitary Engineer may be consulted as to the practicability of this scheme, and of that prepared by Mr Chesler District Board Engineer and herewith submitted with the Chairman's letter No 296/10.7.95 and Sub Collector's endorsement dated 20th July 1895

3.8.95

1895 ~~Local & Municipal~~ **Department.**

No. 1845 S. 4 OCT. 95

Local & Municipal Dept.
CURRENT No. 2514 M

25 LL 9-5-95 ✓
23 [illegible] 11-94 ✓
1061 LL 20-8-94 ✓
514 LL 20-8-94 ✓
1159 LL 27-7-94 ✓
1705 LL 14-2-94 ✓
1155 LL 9-7-93 ✓
1008 LL 9-9-73 ✓
842 LL 17-5-72 ✓

718 LL 22-[illegible]
622 LL 29-3
25 LL 6-[illegible]

TINNEVELLY Collector's **OFFICE.**

From
The Collector

To
The Chief Secretary to
Government
Fort St. George.

SANITARY ENGINEER TO THE GOVERNMENT OF MADRAS
Register No.
SEP 5 95

TO BE RETURNED WITH REPLY.

Dated 3rd }
Received 8 AUG 95 } August 189 5

Endorsed on current No. 1316 of 95

No.

ENCLOSURES. x23 files & 1 case of tracings & plans sent separately)

SUBJECT.

Submitting two schemes for the ~~of~~ water supply of the town of Tuticorin ~~[illegible]~~ proposed respectively ~~and~~ by the Chairman Municipal ~~Chair~~ Council Tuticorin ~~[illegible]~~ and by ~~[illegible]~~ the Dist. Board Engineer, Tinnevelly.

Ent'd 7/8/95

Tuticorin [illegible]

No. 1146

Referred to the Sanitary Board for remarks.

By order
W. Francis
Ag Under Secretary

V.R. 14/8/95

Fort Saint George
17th August 1895 }

Enclosure to letter No. 3514 of 1895

To
The Sanitary Board.
(with plans to be returned)
+ sent separately

S.E./23 200—30-8-95.

GOVERNMENT OF MADRAS.

SANITARY BOARD OFFICE.

SANITARY ENGINEERING BRANCH.

Proceedings of the Sanitary Board, No. 3514 **dated** 26 November **189**5.

President

The Honorable Col. J. Pennycuick R.E., C.S.I., President

Surgn. Lieut. Col. W. G. King, M.B., C.M., D.P.H., Sanitary Commissioner for Madras

J. A. Jones Esq. Mem. Inst. C.E., F.R.S.E., Sanitary Engineer to Govt.

READ the following :—

No. 1146 dated 17th August 1895 from the acting Under Secretary to Government referring to the Sanitary Board for remarks endorsement on current No. 1316 dated 3rd August 1895 from the Collector of Tinnevelly submitting two schemes for the water supply of the Town of Tuticorin proposed respectively by the Chairman of the Municipal Council, Tuticorin and by the District Board Engineer, Tinnevelly.

Resolution.

The Board considers with respect to the commercial importance of Tuticorin the high grade of contamination of the present supply and the actual famine for water pure or impure, that it is very desirable that the town should have its water supply pushed forward at a very early date.

Furt

hether it should be at [illegible]ce decided
hether the Municipality can or cannot
undertake the pumping scheme which is
ecidedly preferable to the gravitation scheme.
he Board considers that until the general
utline is accepted it is waste of time to
onsider details.

/True Extract/

Joint Secretary
Sany Board, Engg. Branch

To

The Chief Secretary to Government,
Local and Municipal Department,
with plans and papers (Reference No. 1146) x sent separa

1895

From

The Joint Secretary
Sanitary Board
Engineering Branch

No. 3514

Dated 26 November 1895

Enc - 2

Subject

Proceedings of the Sanitary Board regarding the Schemes of water Supply for the town of Tuticorin.

1/3644 M of 95

S. B. / 1 17-3-95—200.

GOVERNMENT OF MADRAS.

No. 3515

OFFICE OF SANITARY BOARD,
Fort St. George, 26 Nov 189

From

J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E.,
JOINT SECRETARY, SANITARY BOARD (ENGINEERING BRANCH)

To

The Chief Secretary to Government
Local and Municipal Departm

SIR,

With reference to the [illegible] of 17 August 1895, I have the herewith the Proceedings of the Sanit Board No. 3534 dated 26 November 1895 re the schemes of water supply for the of Tuticorin proposed by the District Engineer, Tinnevelly and the Chair Municipal Council, Tuticorin.

I have the hon
Sir,
Your most o

for Joint Secr
Sanitary Board, Engin

1. R.

ocal & ...nicipal Dept.
CURRENT 1895 3644 M

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1122 L 9-10-95
150 LL 6-2-95 1705 LL 9-2-92 ✓
2380 L 16-4-95 1155 LL 1-9-93 ✓
1061 L 10-8-94 1495 LL 16-9-92 ✓
1025 LL 3-8-94 642 LL 17-5-92
911 LL 27-7-94 718 LL 24-[illegible]-91
157 LL [illegible]-7-94 622 LL 29-3
125 LL 6-[illegible]-92

om

The Joint Secretary
Sanitary Board
Engineering Branch

The Chief Secretary
to Government
Local & Municipal Dept

CHIEF SECRETARY'S GOVT.
27 NOV 1895

n 26
d 27 } November 1895
ved

Enc - 1 & C. No. 2514 M
with genls & 14 plans

Subject

Forwarding Proceed-
f the Sanitary Board
4 of 26 November 1895
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ict Board Engineer
lly and the Chair-
municipal Council
n.

41

LOCAL AND MUNICIPAL DEPARTMENT.

G.O., dated 189 , No.

urrent No. 2514 M. of 1895, dated 3rd August 1895, from the Collector of Tinnevelly.
urrent No. 3644 M of 1895, dated 26th November '95 from the Sanitary Board.

Detached

FOR ORDERS.

In July 1893, the Sanitary Engineer submitted two alternative schemes for the water supply of the town of Tuticorin estimated to cost Rs 3,18,710 and Rs 2,34,670 respectively. The Public Works Department was of opinion that the former should be adopted, observing, however, that the reserve reservoir might be omitted, should there be any difficulty in providing the required funds, as it had not been conclusively shown to be indispensably necessary, but that the filter beds should be retained in any case. The papers were then communicated to the municipal council with the request that it should ascertain and report what contribution the South Indian Railway Company was prepa
to

ocal & [illegible]nicipal Dept.
CURRENT 1895 3644 M

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x 1162 [illegible] 9-[illegible]-95
180 hl 6-2-95 · x 1705 hl 9-7-93 ✓
x 2380 [illegible] 16-4-94 · x 1155 hl 1-9-93 ✓
x 1061 [illegible] 10-8-94 · x 1495 hl 16-8-92 ✓
x 1025 hl 3-8-94 · x 642 hl 17-5-92
x 911 hl 7-7-94 · x 718 hl 21-8-92
x 159 hl [illegible]-7-94 · x 622 hl 29-9-[illegible]
x 25 hl 6-1-92

m
The Joint Secretary
Sanitary Board
Engineering Branch

The Chief Secretary
to Government
Local & Municipal Dept.

27 NOV 1895

d 26
d 27 } November 1895
ved

Enc - 1 & Cr. No. 2514 M
with genls & 14 plans

Subject

Forwarding Proceed-
of the Sanitary Board
14 of 26 November 1895
ding the Schemes of
Supply for the town
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elly and the Chair-
Municipal Council
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41

LOCAL AND MUNICIPAL DEPARTMENT.

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In reply to this, the council stated that the South Indian Railway Company agreed to pay only an annual contribution, the amount of which, however, was not specified, and that it proposed to adopt the complete scheme with a reserve p [illegible] is Rs 3,18,710, postbeds, and introducing the [illegible] octroi duties to meet one fourth of [illegible] cost, requesting Government to contribute the remaining three fourths.

In its order thereon, No. 180 M, dated 6th February 1895, the Government said that it was not prepared to undertake legislation for the introduction of Octroi duties and that it was clear from an examination of the financial resources of the municipality that even if the Government were to contribute a large proportion of the initial cost of the scheme, it would be

unable

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unable to provide the remainde
thereof as well as the necessary work
ing expenses until the enhanced
rates of taxation proposed in the
Bill to amend the District Muni
cipalities Act have become levi
The introduction of the scheme wa
therefore deferred pending the amen
ment of the Act.

2. After this, two other sc
estimated to cost Rs 1,00,000 & Rs 1,61,8
respectively were proposed by t
Chairman of the municipal co
cil and the Local F
the Sanitary Board for re-
marks, the Board says that th
pumping scheme of the San
tary Engineer is decidedly pre-
ferable to the gravitation sch
of the Chairman & the L. F. En
neer, that the council shoul
settle at once whether it can
cannot undertake the forme
as it is very desirable t
in view of the commercial
portance of the places the h
grade of contamination o
present supply and the actual fai
for water, the town shou

o water supply pushed forward
t a very early date & that un-
l the general outline is accepted
is waste of time to consider
etails.

M.g
1/12/95 In G.O. 180 M / 6.2.95 The Council ~~was~~ informed that the pumping scheme, at a cost of over 3 lakhs, was impracticable until the Dt. Municipalities Act was amended. It submitted that the San. Board may be told that the 3 lakh scheme is impossible, & asked to report on the advisability of carrying out either of the schemes now proposed.

13.xii

I do not see why [illegible] scheme should not be looked into. The 3 lakh scheme ~~apparently~~ will probably be found beyond reach even if the amended Dt. Munlties Bill becomes law. Submitted that the Sanity. Bd. be now called upon to pronounce on the two schemes put forward by Mr. Chester and the Chairman. It is evident and has long been so that Tuticorin is sadly in want of a supply of decent water. At present the supply is very scanty and of abominable quality. ~~Any~~ Either of the schemes now put forward would obviously very much improve matters. ~~[illegible]~~ The need is a very pressing one and calls for ~~[illegible]~~ very speedy remedy.

31/12/95.

heavy burden on the town, if that the annual charges could be met under the amended Munl. Act, if passed — I agree that the other schemes had better be considered — They may not be so good but either of them wd. apparently be much better than the existing state of things

8/1/96

Order. No. 75 Mun. d/ 16-1-96

~~The Sanitary Board will be informed that~~, the pumping scheme, approved of by ~~it~~ the Sanitary Bd., ~~cannot be carried out for want of funds~~, as it would entail too heavy a burden on the Municipality and is therefore impracticable. ~~As however Tuticorin is in urgent~~ As however the need of an improved water supply for Tuticorin is very pressing the Bd. will be requested to ~~[illegible]~~ its proposals ~~remarks~~ ~~[illegible]~~ at an early date.

(from orders) 14/1/96

W.W.
16.1.96

To
The Sanitary Board. Pto
Eng. Branch (with papers
Engg. to be returned)
Chairman M.C. Tuticorin
thro' the Collr. of Tinnevelly
Pd/18 [illegible]
80
Dispd. 16/1/96

Plans sent on the 20th January 96/.

40

From
~~FOR~~ ORDERS.

2514 o 3644 M.

~~H[illegible]~~

CS.

75 m