Date taken out.	For what purpose.			Initials of clerk taking the paper or of attender.	Date returned.	Initials of attender.
	Department.	C. No.	Year.			

[L. & M.
2,000-8-96.]

35

Local & Muni. (1896) Department.

MISCELLANEOUS.

G.O., No. 1027 Mi

DATED 18th June 1896

[Despatch Abstract.]

Water-supply.

Communicating, with remark, to the Municipal Council, Gudiyattam, the proceedings of the Sanitary Board on the ---- scheme of the town.

BACK PAPERS.

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

FURTHER PAPERS.

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

Report on the Water Supply

of

Cuddalore

The subject of this report is a proposal by the Sanitary Commissioner in his Inspection Notes of the town of Cuddalore, embodied in G.O dated 1st August 1895 No 1237 M. The proposal is contained in the following extract from the Inspection Notes.

"In consideration of the proximity of the river which has a rich substream, it seems to me that a cheap water supply could be devised by the Sanitary Engineer's Department. The Municipality could probably not afford to pay for a scheme permitting of complete distribution within the town, but an arrangement that would permit of water being pumped through a single small main delivering into elevated cisterns provided with taps situated at important points would, if not fulfilling the requirements of an engineering "Major Work", be

of

considerable sanitary value to the people".

Source of Supply - The supply is to be obtained from the underflow in the bed of the Kavendinga Nadi, which passes through and divides the Municipality of Gudiyattam into two portions. The portions of the town nearest the river derive their present water supply from spring channels excavated in the bed of the river.

3. Site of Infiltration Works — The proposed site of the infiltration works is 2300 feet above the causeway and 500 feet above the point where a large nullah, which receives a great portion of the town storm water drainage, debouches into the river. The site cannot be considered altogether free from sanitary objections as the village of Bodipet which forms a part of the Gudiyattam Municipality lies on the right bank of the river about $\frac{3}{4}$ mile above the site selected. There would be no advantage in placing the infiltration works higher up the river, unless the works were placed above the village of Bodipet. To do so would add considerably to the cost of the scheme.

In the present scheme economy is admitted a question of first importance and this has weighed down such objections as there are against the site selected from a sanitary point of view. The site has been selected in consultation with the Sanitary Commissioner

4 Arrangements for collecting water - The nature of the works to be constructed for infiltration of water will depend upon the depth of saturated sand in the river in dry weather. If the depth of saturated sand is moderate the best method would be to lay 9" open jointed stoneware pipes about 5 feet below the lowest water level. If the depth is great wells would be necessary.

5. Quantity of water to be provided - It is proposed to provide 5 gallons per head on the total population of the town. In Northern India several towns of much greater importance than Gudiyattam are content with a supply of 5 gallons, and in some instances even less. An allowance of 5 gallons cannot be considered inadequate especially as under the arrangements proposed there will be little or no waste

of

water. The points of distribution in the
villeine are few, which will involve more
labor in fetching water - a circumstance
that will act as a check on waste. The
population of Gudiyattam is 19000. The
quantity of water required daily will be
19000 × 5 = 95,000 gallons. If the whole supply
has to be pumped in 12 hours the delivery
will have to be

8000 gallons per hour

140 gallons per minute

Engines and Pumps - The lift will
be about 55 feet, and it is proposed to have
2 engines and pumps capable of lifting
together 140 gallons per minute.

7. Distribution - The Sanitary
Commissioner suggests pumping through
a long main which will at various points
deliver into elevated cisterns, which will
form centres of distribution. Elevated iron
tanks are expensive and for the same
capacity a single tank is much cheaper
than several smaller ones. Water stored in
a single large tank is less liable to dete-
rioration than when the same quantity

is

is stored in several small tanks. Pumping
through a short main is to be preferred to
pumping through a long main. It would,
therefore, be altogether a better plan to
pump water into a single tank placed
as close as possible to the engine house & to
distribute water through the town by
gravitation by pipes from the tank. The
accompanying plan shows the proposed
mode of distribution. The water will be
pumped through a 6" iron main 1150 feet
long into an elevated tank. The tank will
be 25 feet above ground and capable of
holding ⅙ day's supply. As it is proposed
not to have any pumping at nights there
will not be a great difference between
the maximum and minimum demand
and a tank to hold ⅙ day's supply will
suffice. From the tank water will be
distributed by a system of pipes consisting
of:

1100 feet	6"	pipes
650 feet	5"	"
1180 feet	4"	"
2650 feet	3"	"
3000 feet	2"	"

There

there will be 13 fountains for the people to draw water. These are marked in red circles on the plan.

9. Initial cost - The scheme will cost approximately as below :-

	Rs
Infiltration Works	5,000
Engine house and well	2,000
Iron elevated tank	10,000
Engines and Pumps	6,000
Pipes	15,000
	38,000
Establishment, tools and plant	4,000
Total	42,000

9. The annual cost - on the assumption that Government will make a free grant of half the cost of the scheme the annual cost of the scheme will be :-

	Rs
Interest & sinking fund on Rs 21,000/- at 5.96%	1252
Cost of Pumping 95 000 gallons daily at 10 annas per million gallons lifted 1 foot high	1277
Establishment including repairs	471
Total	3,000

10. Ways and means - The Municipality at present levies house and land tax at 5% and derives a revenue of about Rs 3,000. The maximum tax leviable under the act is 7½%. The increase of taxation to its full limit will yield an additional income of Rs 1,500. There will also be a saving of about Rs 500 annually to the municipality, which it at present spends for the upkeep of the water supply. The balance of Rs 1000 can be easily raised by a water tax, even if the tax has to be restricted only to the area that derives any benefit from the scheme.

11. If the scheme as outlined and roughly estimated here is approved the Municipality may be advised to allot a sum of Rs 100 for taking a few more necessary levels & for sinking trial pits to ascertain depth of sand and low water level as this information is necessary before complete plans & estimates could be prepared.

Office of Asst Engr to Govt
Fort St George, 18 Dec 1895

/Sd Hormusji Nowroji
A.M.I.C.E
Asst Engr to Govt

/True copy/

Secy
Engg Branch

Office of Sanitary Board

General Sanitation Branch

Office Note

No. 33/15 12th February 1896.

The scheme is, I consider, suitable, except that I would claim 6 gallons instead of 5 per head as the minimum likely to serve sanitary ends, and therefore justify the cost. That towns use less only means they are subject to greater risk by employing other sources to a larger extent, but, before committing the town to the acknowledged faulty position of the filtering gallery, I would like to know how far it would approach the impossible to secure funds that the head works might be made above the suburb mentioned. If at all feasible this should certainly be done. It is possible pumping may work out cheaper, on account of the better head available.

2. This is the first instance in which it has been attempted to draw up a scheme on principles only allowable where a

poor

poor village is concerned. If it did not involve too much trouble, I consider it would be opportune to ascertain by extending the estimate how far economy has been subserved by the arrangements when compared with what would have been the cost had an entire scheme been drawn up.

The Assistant Sanitary Engineer has adduced reasons I accept for modifying my original proposals.

Re your suggestions as to referring question of cost to the Municipality first, this had better be done; but the Proceedings must be of a nature urging the adoption of the scheme by the Municipality. They ought to be able to find money right enough.

/sd/ W. G. King
Surgn. Lt-Col.
Sanitary Commr.

To
The Sanitary Engineer to Govt.

/True Copy/

Secy
Santy Board, Engg Branch

L. & M.

Scheme No. 2

Note

The effect of increasing the supply from 5 to 6 gallons per head will be to raise the cost of the works to Rs 44,000. It involves the increase of main from 6" to 7" and a proportionate increase in the smaller mains. There is sufficient margin in the original estimate for engines, so no increase will be necessary on this item. The anticipated yield from the gallery must be taken as very approximate, and then it is not worth while trying to calculate the cost of a small increase in supply.

Scheme No. 3

2. If the Headworks be located above the village of Bodiper it will require an additional length of 2700 feet 7" piping costing in all about Rs 7,500. The difference of levels between the two sites does little more than compensate for the loss in friction in the extra length of piping. It therefore makes no appreciable difference in the lift required.

3

3. The cost of a complete scheme providing 15 gallons per head may be roughly estimated as follows:- Schemes 4 C1

	Rs
Infiltration works	15,000
Engine House and well	5,000
Iron elevated tanks	20,000
Engines and Pumps	25,000
Pipes	50000
	115,000
Establishment & Contingencies	17,000
	Rs 132,000

The initial and annual cost of the three schemes, on the assumption that Government will contribute half the initial cost, will be as follows:-

		Initial cost	Annual cost
1	5 gallons scheme with head works as originally proposed	42,000	3,000
2	6 —— do —— do —— do ——	44,000	3,311
3	6 —— do —— with head works above Bodiper	51,500	3,537
4	15 gallons Scheme —— do ——	132,000	9,000

/Sd/ Hormusji Nowroji
Asst Sany Engr to Govt

/True copy/

Secy
Sany Board, Engg Branch

S.E. 23 200—30-8-95.

GOVERNMENT OF MADRAS.

SANITARY BOARD OFFICE.

SANITARY ENGINEERING BRANCH.

Proceedings of the Sanitary Board, No. 668, dated 4th March 1896.

Present

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

J. A. Jones Esqr. Assoc Inst. C.E. F.R.S.E, Sanitary Engineer to Government.

READ the following:—

G.O. No. 1237 m dated 1st August 1895 embodying the Sanitary Commissioner's Inspection notes on Gudiyatam Municipality, which contains his proposal regarding Gudiyatam Water Supply, and also report of the Assistant Sanitary Engineer to Government thereon.

Resolution

The Sanitary Board with reference to the Sanitary Commissioners inspection notes embodied in G.O. dated 1st August 1895 No. 1237 m having called for and considered the accompanying plan & report from the Assistant Sanitary Engineer to Govt copies of which are forwarded to the Council of Gudiyatam for information strongly urges the Council to consider all over the advisability of carrying out a scheme of water Supply, and recommends the Assistant Sanitary Engineer's Scheme No. 3.

2. Government has not been approached as to the proposed grant of one half the cost but should the Council adopt the scheme there is little doubt but that

that Government will make a contribution and it is for the Council after acceptance of the schemes and on its intimating its desire to have it carried out to ask for a grant from Government.

3. The Sanitary Board will be glad to hear at an early date the resolution of the Council on this matter.

(True Extract)

(Signed) D. A. Jones

Secretary

Sanitary Board (Engineering Branch)

To

The Chairman, Municipal Council,

Gudiyatam

through the Collector of North Arcot

with 1 plan & 1 report prepared by the Sanitary Board

(True Copy)

Secretary

Sany: Board (Engineering Branch)

Office of Municipal Council

No. 136. Gudiyatam 9th April 1896

From

M. Subrayalu Chetty Garu,

Chairman, Municipal Council,

Gudiyatam.

To

The Sanitary Board

Madras.

Sir,

With reference to your Proceedings No. 1558 ~ dated 18th March 1896 forwarding plan & estimate for the proposed Water Supply Scheme in this Town, I have the honor to forward an Extract of the Proceedings of the Council dated 30th March 1896 for your ~ information.

This subject will also be reported to ~ Government in the Administration report.

I have the honor to be,

Sir,

Your most obedt Servt

(Signed) M. Subrayalu Chetty

Chairman

(True Copy)

Secretary

Sany: Board (Engineering Branch).

Extract from the Minutes of Proceedings of the Municipal Council, Gudiyatam, passed at their meeting held on the 30th March 1896.

8. Read Proceedings of Sanitary Board No. 458 dated 18th March 1896 for Water Supply Scheme with plan and estimate.

The Council will be very glad to have the Water Supply Scheme introduced into this Municipality, but they regret that the present financial condition do not permit them to take up the work for some years to come.

(Signed) M. Subrayalu Chetty
Chairman

(True Extract)

Office of the Municipal Council
Gudiyatam 8th April 1896

(Signed) M. Subrayalu Chetty
Chairman

'True Copy'

Secretary
Sanity: Board (Engineering Branch).

Statement showing the mortality in the Gudiyatam Municipality for the ten years ending 1895.

Years	Birth rate per mille of the estimated population.	Death rate per mille of the estimated population.	Percentage of deaths from					
			Cholera	Small-pox	Fever	Dysentery & Diarrhoea	Injuries	All other causes
1886	21·7	13·3	"	15·2	31·6	3·0	1·3	48·9
1887	36·8	32·4	29·6	0·5	13·3	3·1	0·5	53·0
1888	27·9	46·1	40·2	3·0	9·0	1·9	0·2	25·7
1889	23·9	20·5	15·3	3·1	21·8	4·0	0·2	55·5
1890	22·1	19·7	4·6	9·2	26·3	6·2	0·3	53·4
1891	25·3	21·9	11·6	15·5	19·6	12·3	0·2	40·8
1892	33·4	29·5	19·3	2·1	28·0	16·7	0·5	33·4
1893	33·4	34·7	37·2	0·6	25·7	7·9	0·9	27·7
1894	25·6	19·9	8·5	0·2	49·5	8·5	0·2	33·1
1895	38·0	22·3	1·3	1·3	44·5	7·7	0·2	46·3

S.E. 23 200—30-8-95.

GOVERNMENT OF MADRAS.

SANITARY BOARD OFFICE.

SANITARY ENGINEERING BRANCH.

Proceedings of the Sanitary Board, No. 1343 dated 1st May 1896.

Present

The Hon'ble Col: D. Mc Neil Campbell R.E. President

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

J. A. Jones Esqr Mem. Inst: C.E. F.R.S.E., Sanitary Engineer to Government

READ the following:—

Letter from the Chairman, Municipal Council, Gudiyatam No 136 Dated 9th April 1896 forwarding resolution of the Council regarding the proposed Water Supply Scheme for Gudiyatam.

Again Sanitary Board's Proceedings No 458 dated 4th March 1896.

Resolved that these papers & the accompanying report be forwarded for the information of Government. The Board considers looking to the accompanying vital statistics that a Water Supply Scheme for Gudiyatam is urgently required: a provision of 6 gallons per head is insufficient but seems unavoidable having regard to working charges. The Board advises liberal treatment and early action by Government.

(True Extract)

Secretary
Sanitary Board (Engineering Branch)

J.

The Chief Secretary to Government
Local & Municipal Department
with papers -/

Ed

L&Mo

SS
1824 Aug

Enclosure to letter No. 1344 of 1896

1896

From

The Secretary
Sanitary Board
Engineering Branch

To

The Chief Secretary
to Government
Local & Municipal Dept

No 1343
Dated 1st May 1896

Subject

Gudiyatam Water Supply
Scheme

Proceedings of the
Sanitary Board reg:-

S. B. 1 17-3-95—200.

No. 1344

GOVERNMENT OF MADRAS.

OFFICE OF SANITARY BOARD,

Fort St. George, 1st May 1896.

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 Department.

SIR,

I have the honor to forward herewith Proceedings of the Sanitary Board No. 1343 dated 1st May 1896, with connected papers, in reference to a Water Supply Scheme for Gudiyattam.

I have the honor to be
Sir
Your most obedt. servt.

for Secretary
Sanitary Board, Engg. Branch.

1237h 1-8-95
1499h 16-9-95
301h 20-2-96

Local 1896
1324h
RENT

From

The Secretary,
Sanitary Board,
Engineering Branch.

To

The Chief Secretary
to Government
Local & municipal Dept.

No. 1344

Dated 1st
Despd 1st } May 1896
Recved 2 MAY. 96

Rec'd 1

Subject

Gadiyatam Water Supply Scheme

Forwarding Proceedings of the Sanitary Board

Reg:

8/5.

LOCAL AND MUNICIPAL DEPARTMENT.

Again G.O., dated 1st Augt 1895 ~~189~~, No. 1237m.
Current No. 1324m of 1896, dated 1st May from the Sanitary Engineer
Current No. of 189, dated from the

FOR ORDERS.

In para 5 (b) of his inspection notes on the Gudiyatam Municipality recorded in the G.O. read above, the Sanitary Commissioner suggested that a cheap scheme of water supply should be devised for the town, and proposed that the sub-stream water from the rivers passing through the town may be pumped through a single main into a number of elevated tanks provided with taps, placed at important points in the town. The attention of the Sanitary Engineer was drawn to this proposal and with the letter read above Mr. Jones submits the proceedings of the Sanitary Board on the matter, together with connected papers.

At the instance of the Sanitary Board, the assistant Sanitary Engineer prepared a scheme providing for a supply of 5 gallons per head of the

the population of the town (19,000). He proposes to pump the water from the stream at a point 2800 feet above the causeway and store it in a single elevated tank, 25 feet above the ground and capable of holding one-sixth days' supply, from which it will be distributed by means of pipes.

The cost of this scheme is estimated at Rs 42,000 & the annual charges at Rs 3000 on the assumption that Govt would contribute half the cost & lend the other half on the usual terms.

The Sanitary Commissioner, while approving the scheme as a whole, suggests (1) that the scheme should provide for a supply of 6 gallons per head & (2) that the spot selected for the headworks should be higher up the stream as one of the villages (Bodipet) included in the town lies on the right bank of the river above the spot selected by the Assistant Sanitary Engineer and drains into the stream.

The following table exhibits the initial and annual costs of (1) the scheme originally prepared by the Asstt. Sanitary Engineer & (2) (3) its cost if no (1) or nos (1) & (2) of the suggestions of the Sanitary Commissioner should be adopted & (4) the cost of a scheme providing for a supply of 15 gallons per head with the headworks above Bodipet

	Initial cost.	Annual cost
1. 5 gallons scheme with Headworks as originally proposed	Rs 42,000	3000
2. 6 ——— do ——— do ——— do ———	44,000	3,314
3. 6 ——— do ——— with Headworks above Bodipet	51,500	3537
4. 15 ——— do ——— do ———	1,32,000	9000

The Sanitary Board recommended to the Council the adoption of scheme No 3, but the Council expresses its inability from want of funds to adopt any scheme of water-supply for some years to come.

The Board, however, in their Proceedings dated 1st May 1896, state that the town urgently requires a scheme of water-supply and recommend that early action should be taken by Govt in the matter.

It is clear that any very costly scheme is out of the question seeing that the town is a very small one. Scheme No 3 appears to be the most suitable. If Govt contributes half the cost and lends the other half on the usual terms, the Council will have to provide for an annual charge of Rs 3537 on

on account of the Scheme. The

The tax on buildings and lands is now being levied at 5 percent. The average receipts under this head during the last five years amount to Rs 3450. In the budget for 1896-97 the receipts have been estimated at Rs 4380. It may be safely assumed that in future years the average receipts would not fall short of Rs 4,000 and if the tax is raised to the maximum rate of 7½ per cent, it may yield an additional sum of Rs 2000. A water tax at 2 per cent would bring in a revenue of Rs 1,600 and when the water-supply scheme is introduced the Municipal Council would make a saving of about Rs 400 per annum which is at present being spent on water supply. There will thus be a surplus of Rs 4000 annually available for expenditure on the Scheme. It would appear, therefore that the Municipality can afford the Scheme, the adoption of

of which was recommended by the Sanitary Board.

Submitted that these papers may be placed before the Council with the request that it will reconsider its previous resolution on the subject, & allot Rs 100 for further investigation thereof.

27/5/96

29/5/96 The proposed work seems to be a very desirable one; and as is remarked by Dr. Kunz the first instance of a Scheme calculated to meet at any rate partially the requirements of a poor & small town has been put forward. The reluctance of the Local Council evidently arises from unwillingness to incur further taxation. The scheme is made within their means if the house tax is raised 5 7/8 p.c and a water tax imposed. It is submitted that the Council should be asked to provide funds for a preliminary investigation. It seems useless to call upon them to do more until the preliminary examination proves satisfactory. Plans and estimates have been prepared: one from

The plan mentioned has been received

11/6/96.

Water Supply - Purnyatam Municipality

FOR ORDERS.

from Sapramee what a difference there is between the length stated and those actually submitted by him.

Sd 9/6/96.

C. No 1324

No. 1027 Proc. dy 18-6-96

Order. The proceedings of the San. Bd. No. 1345 dy 1-5-96 will be communicated to the Muni. Council, Gudiyatam, with the request that a sum of Rs 100 may be placed at the disposal of the Sanitary Engineer for the purpose of investigating the proposed water supply scheme

(from orders)

2. The plan referred to in para. 1 of the Bd's resolution No 658 dy 4.3.96 should have been submitted to Govt.

From orders

Sd/ 11-6-96

Sd 16-6-96.

Addl. P. Engr. for C.

Chairman - Muni. C - Gudiyatam para 1 only
San. Board. P+O
San. Engr. P+O
Despd 19/6/96

When given for copying
When copied
When examined
When signed
} 189.

READ AGAIN G.O., No. DATED
189 ,

CURRENT No.

ENCLOSURES TO C. No.

ORDER OF GOVERNMENT	A	A	A	A	A	A	A
LETTER OF GOVERNMENT.							
STATEMENT WITH DITTO.							
PAPERS NOT FILED UP, BEING MEANT FOR DESPATCH IN ORIGINAL.							

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