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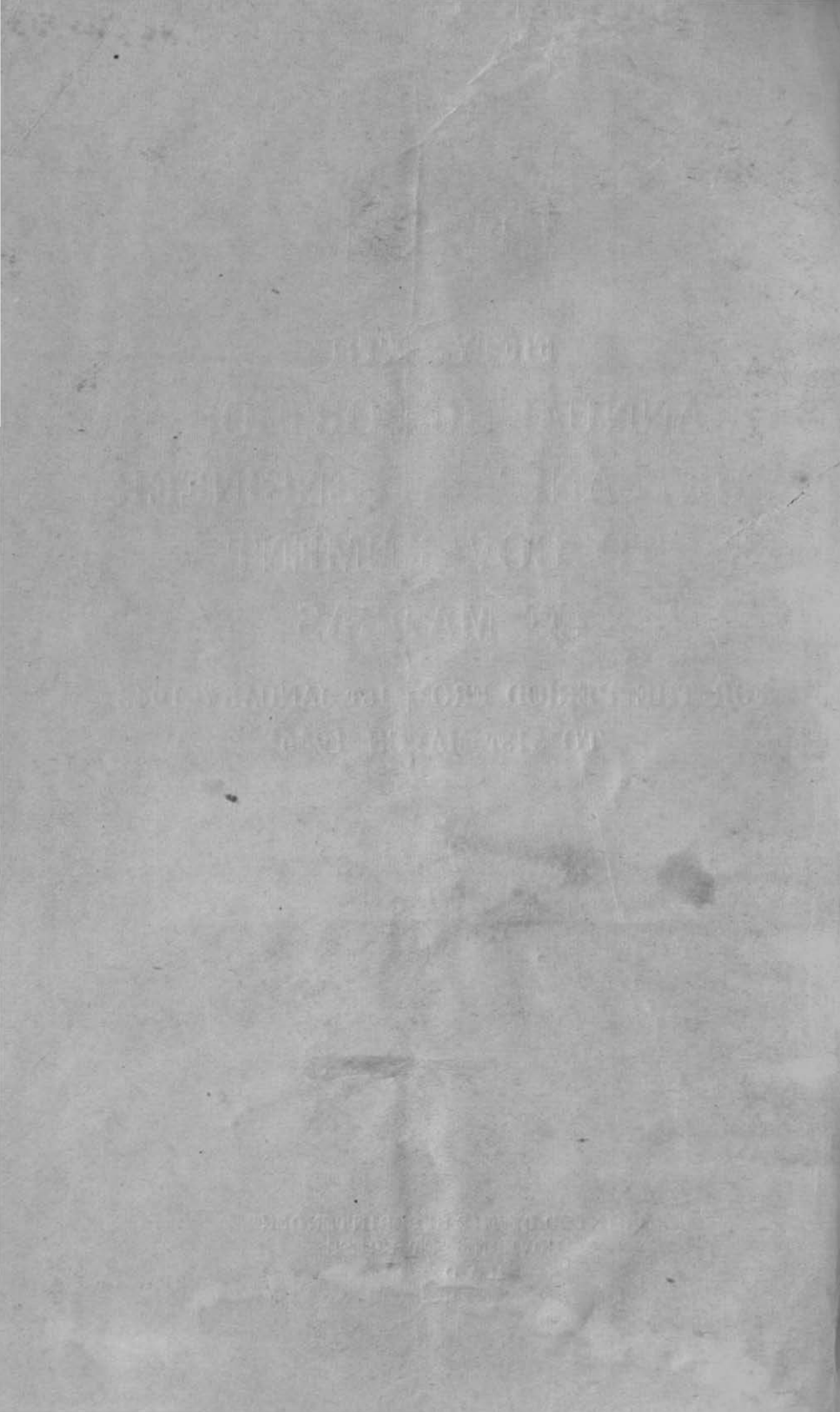


FIFTY-SIXTH
ANNUAL REPORT OF
THE SANITARY ENGINEER
TO GOVERNMENT
OF MADRAS

FOR THE PERIOD FROM 1ST JANUARY 1945
TO 31ST MARCH 1946

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MADRAS
1947

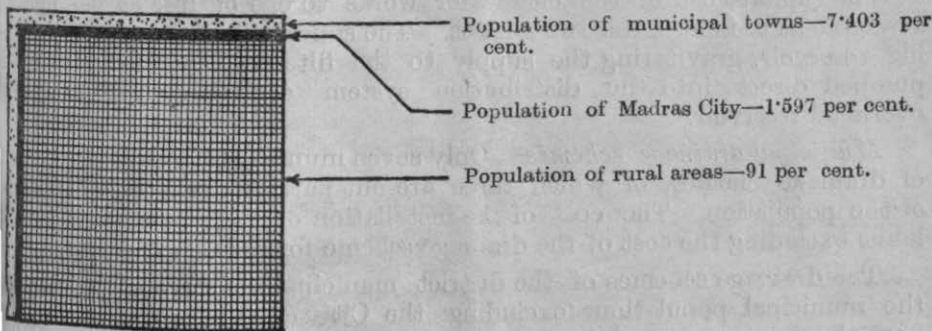


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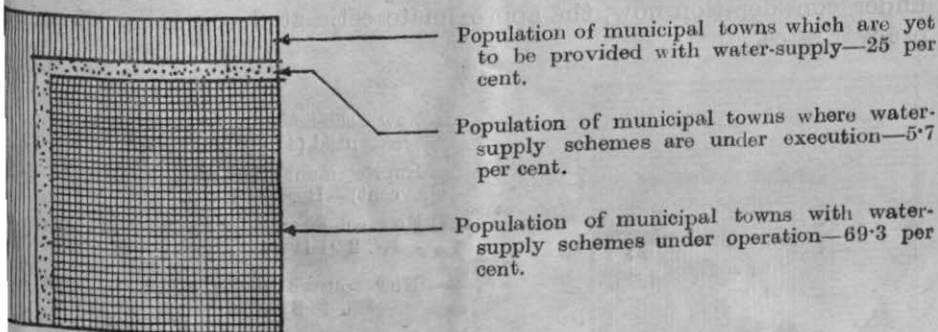
FIFTY-SIXTH ANNUAL REPORT OF THE SANITARY ENGINEER TO GOVERNMENT OF MADRAS FOR 1945-46 (1ST JANUARY 1945 TO 31ST MARCH 1946).

1. SUMMARY OF THE SITUATION.

Municipal water-supply schemes.—The total number of municipal water-supply schemes in operation (including the City of Madras), during the fifteen months ending 31st March 1946, continued to be 48. Excluding the City of Madras, there are now 83 district municipalities in the Presidency with a population of 3,689,931 representing 7.403 per cent of the total population of the Province which is 49,840,564 as per census of 1941. If the City of Madras which has a population of 777,481 is included, 9 per cent of the population of the Presidency has the benefit of municipal administration as regards water-supply.

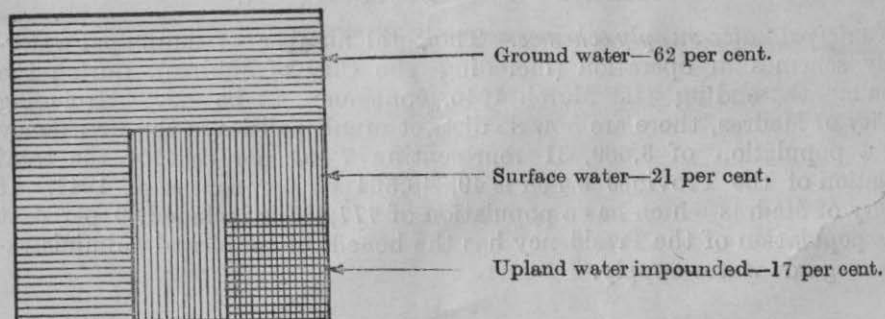


The population served with water-supply in 47 district municipal towns is 2,555,943 representing 69.3 per cent of the municipal population excluding the City of Madras.



Including the City of Madras, the total population (municipal) served with protected water-supply comes to 3,333,424 representing 74.6 per cent of the total municipal population of the Province. The cost involved in the

installation of these district municipal schemes, excluding the City of Madras is Rs. 270 lakhs in round figures. Of these 47 schemes in operation, 9 have gravitational supplies while 34 are pumping and 4 are both by gravitation and by pumping according to the adequacy of the yield at the sources. Of these 47 schemes in operation, 29 schemes or 62 per cent represents ground water-sources, 8 schemes or 17 per cent are upland impounded sources and 10 schemes or 21 per cent are sources with surface waters from rivers and canals.



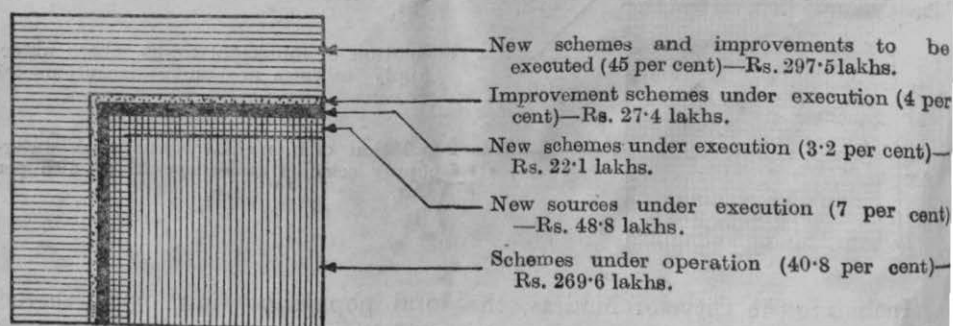
The capital cost of the city water works to end of 1945 as per figures available at present is Rs. 162·2 lakhs. The source of supply is an impounding reservoir, gravitating the supply to the filters. The filtered water is pumped direct into the distribution system controlled by a balancing overhead reservoir.

Municipal drainage schemes.—Only seven municipalities have the benefit of drainage schemes, of which three are but partial, serving only a portion of the population. The cost of the installation of these schemes is Rs. 63 lakhs excluding the cost of the drainage scheme for the City of Madras.

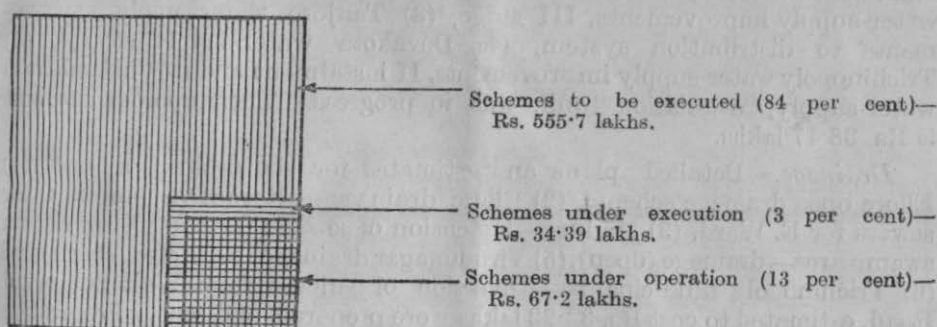
The drainage schemes of the district municipalities serve 14 per cent of the municipal population (excluding the City of Madras), assuming the partial schemes to serve the entire municipal towns concerned.

Including the City of Madras, the total population served by drainage schemes is 1,356,282 representing 30·7 per cent of the municipal population.

Cost of municipal water-supply and drainage schemes ahead.—To provide water-supply for the remaining 30·7 per cent of the population of the district municipalities, inclusive of the improvements to the existing schemes under consideration now, the approximate estimated cost is Rs. 396 lakhs at pre-war rates.



To provide drainage schemes to serve the remaining 86 per cent of the municipal population the probable cost is Rs. 665.96 lakhs, at pre-war rates, of which schemes estimated to cost Rs. 34.39 lakhs are under execution.



Thus for the major water-supply and drainage schemes ahead, for the municipal towns, an expenditure of Rs. 1,061.96 lakhs approximately has to be incurred including schemes under execution at present.

Panchayat water-supplies.—Twelve panchayats had been provided with protected water-supply schemes though in some cases the supply is but partial. The cost involved in the installation of these schemes is Rs. 9.64 lakhs. No estimate, however, has been prepared as to the work ahead so far as these panchayats are concerned, of which there are 6,336 in the Province.

2. PROGRESS IN 1945-46 (1ST JANUARY 1945 to 31ST MARCH 1946).

(a) MUNICIPAL SCHEMES.

Execution.

Water-supply.—Ten schemes of water-supply continued to be under execution by the Public Works Department at an estimated cost of Rs. 99.33 lakhs. The outlay of expenditure during the period was Rs. 5.85 lakhs and the total expenditure on these schemes at the close of the period was Rs. 69.44 lakhs. Seven schemes continued to be under execution by the Municipal Engineering staff under the supervision of the Public Works Department estimated to cost Rs. 7.75 lakhs. The expenditure during the period was Rs. 0.223 lakh and the total expenditure to the end of the period was Rs. 4.65 lakhs.

Drainage.—Five drainage schemes estimated to cost Rs. 28.94 lakhs continued to be under execution by the Public Works Department. The total expenditure during the year was Rs. 3.09 lakhs and the total expenditure to the end of March 1946 was Rs. 12.03 lakhs. Salem drainage scheme continued to be carried out by the municipality under the supervision of the Public Works Department. The cost of the scheme was Rs. 5.45 lakhs and the expenditure during the period Rs. 0.90 lakh and the total expenditure to the end of the period Rs. 3.02 lakhs.

Design.

Water-supply.—Detailed plans and estimates for Trichinopoly water-supply (rectification of defects, duplicate line for old well No. 1 to Collecting well) estimated to cost Rs. 1.20 lakhs were prepared and sent. As a special case, detailed plans and estimates for water-supply to Tungabhadra Project

distribution system, Filter bed and reservoir estimated to cost Rs. 3.21 lakhs were also prepared and sent. Preparation of plans and estimates for six other schemes (1) Cocanada water-supply improvements, I stage, (2) Cocanada water-supply improvements, III stage, (3) Tanjore water-supply improvements to distribution system, (4) Devakota water-supply scheme, (5) Trichinopoly water-supply improvements, II instalment and (6) Chidambaram water-supply, Coagulation tank, was in progress. Their approximate cost is Rs. 38.47 lakhs.

Drainage.—Detailed plans and estimates for six drainage schemes (1) Ellore open drainage scheme, (2) Ellore drainage—alternative proposals for sewers for E. Ward, (3) Madura—Extension of sewage farm, (4) Vizagapatam swamp area—drainage (open), (5) Virudunagar drainage (restricted scheme) and (6) Trichinopoly municipality—Diversion of sullage from West Boulevard Road, estimated to cost Rs. 32.22 lakhs were prepared and sent. Preparation of plans and estimates for Saidapet drainage and sewerage scheme for Vizagapatam (swamp area) estimated to cost Rs. 17.92 lakhs were in progress.

An outline for the sewerage scheme for Tungabhadra Project colony was also prepared as a special case and sent to the Chief Engineer for Irrigation.

Investigations.

Water-supply.—The investigations of water-supply schemes for three municipalities—Chittoor, Gudivada and Mangalore—estimated to cost Rs. 70 lakhs were in progress during the period and the investigation report for Gudivada water-supply estimated to cost Rs. 4.56 lakhs was sent during the period.

Drainage.—The investigations of drainage schemes for (1) Ootacamund (supplemental drainage), (2) Disposal of stormwater from water-logged areas in West Mambalam-Kodambakkam area, (3) Tiruppattur (Vellai Vaikal improvements) estimated to cost Rs. 8.10 lakhs were in progress during the period and the investigation report for Ootacamund Drainage (supplemental) and the investigation report regarding disposal of stormwater from water-logged areas in West Mambalam-Kodambakkam, etc., estimated to cost Rs. 7.80 lakhs were sent during the period. Besides these, investigation of drainage for Lady Willingdon Leper Sanatorium at Tirumani (near Chingleput) estimated to cost Rs. 0.96 lakh was in progress.

(b) PANCHAYATS.

Water-supply.

Execution.—Two schemes estimated to cost Rs. 2.80 lakhs were under execution by the Public Works Department. The expenditure during the year was Rs. 0.35 lakh and the total expenditure to the end of the year was Rs. 2.58 lakhs.

Design.—Detailed plans and estimates for water-supply improvements, Manaparai Panchayat, estimated to cost Rs. 0.31 lakh were prepared and sent. Detailed plans and estimates for Salur water-supply scheme at a cost of Rs. 1 lakh were prepared during the year.

Investigation.—The investigation of water-supply for Kollegal Panchayat was carried out during the year and report also sent. The estimated cost of the Kollegal water-supply scheme is Rs. 5.83 lakhs.

Preliminary reports.—Preliminary report for Pattukkottai Panchayat water-supply scheme with alternative proposals estimated to cost Rs. 1.85 lakhs and Rs. 1.58 lakhs, respectively, were also sent during the period.

Drainage.

There are no drainage schemes worth mentioning functioning in panchayats.

Investigations in panchayat areas—Nil.

Preliminary reports sent.—Nil.

3. PROFESSIONAL SANCTION FOR SANITARY WORKS.

With the abolition of classification of works as 'Sanitary' and 'Non-Sanitary' in G.O. No. 130, P.H., dated 18th January 1943, this department is now concerned with technical sanction only of water-supply and drainage works. During the period under report plans and estimates for 30 works (minor water-supply and drainage works aggregating to Rs. 3.17 lakhs) were scrutinized and technical sanction was accorded for same. Of these, 22 were for water-supply works estimated to cost Rs. 2.11 lakhs, and 8 for drainage works estimated to cost Rs. 1.06 lakhs. The amount of centage charges collected during the year for such scrutiny was Rs. 568.

In addition proposals for water-supply and sanitary installations for educational institutions received from the Director of Public Instruction were also scrutinized.

The scrutiny of plans and estimates for rural water-supply schemes received from the Board of Revenue was also done during the year.

4. GENERAL SANITATION AND TYPE DESIGNS.

The special staff sanctioned for the preparation of type designs having been disbanded in 1943, no fresh type designs have been prepared.

5. WATER WORKS IN OPERATION.

(a) *Significant facts in their maintenance.*—As against 47 municipalities possessing water works, 44 municipalities have got competent Municipal Engineers.

Bye-laws relating to water works of municipalities continued to be examined and revised by this office in virtue of powers delegated by Government to the Sanitary Engineer to Government.

(b) *Rate of water-supply per head per day.*—A graph representing the rate of water-supply per head per day is attached as Appendix II.

There has been improvement in the rate of supply for Madras. The consumption per head in 1945 as per figures available was 30.7 gallons per day.

6. WATER WORKS FINANCE—RATE OF TAXATION.

The detailed particulars required for furnishing the information in this paragraph are not available for the period under report.

A graphical representation showing the cost per million foot gallon of pumpage of water is attached to the report as Appendix I.

7. POST-WAR DEVELOPMENT SCHEME.

A revised programme of works for water-supply and drainage schemes estimated to cost Rs. 25.6 crores (at pre-war rates) spreading over a period of 20 years with expenditure limited to Rs. 3.71 crores for the first 5 years was prepared and sent. Estimates relating to machinery, mathematical instruments, labour, quantity and cost of materials required for the first 5 years

were also prepared and sent. The compendium of provincial requirements both for water-supply and drainage was prepared and sent.

8. GENERAL.

(a) The Instructor in Elementary Sanitary Engineering continued to conduct the course of Lectures in Elementary Sanitary Engineering to the students undergoing Health Officer's and Sanitary Inspector's courses in the Madras Medical College. The Instructor was also in charge of training rural wells sub-overseers for rural water supply schemes, a four-month course which was started in October 1945.

(b) The Sanitary Engineer to Government continued to be a member of the Board of Public Health and was also the President of the Water and Sewage Purification Committee so long as the post of Sanitary Engineer to Government was held by Sri Rao Bahadur A. R. Venkata Acharya, i.e., till 1st October 1945, afternoon. Thereafter the Sanitary Engineer to Government continues to be a member of the Water and Sewage Purification Committee. The Sanitary Engineer continued to be a Special Councillor of the Corporation of Madras. He is also the Inspecting officer of Grant-in-aid Works in the Corporation of Madras (other than Road and Electrical works) and in this duty he continues to be assisted by a Junior Engineer. The Sanitary Engineer was also a member of the Housing Committee constituted for providing housing accommodation for Government servants.

(c) *Direction personnel.*—The post of Sanitary Engineer to Government was held by Sri Rao Bahadur A. R. Venkata Acharya, B.E., I.S.E. (now Chief Engineer for Irrigation) till 1st October 1945, afternoon.

Sri S. Rajagopalan, B.E., then Executive Engineer (Public Health), Northern Circle, held additional charge of the Sanitary Engineer's post from 1st October 1945, afternoon to 6th December 1945, afternoon.

From 6th December 1945, afternoon the post of Sanitary Engineer to Government is held by Sri S. Ramachandra, B.E., A.M.I.C.E., M.INST.M. & CY.E.

The post of Executive Engineer (Public Health), Northern Circle, was held by Sri S. Rajagopalan, B.E., during the year.

Sri R. Lakshmana Ayyar, B.E., held the post of Executive Engineer (Public Health), Southern Circle, during the year, except for the period 14th April 1945, forenoon to 14th May 1945, forenoon when he was on leave and during this leave period Sri K. Acharyulu (C.E.), Executive Engineer, Public Works Department, officiated as Executive Engineer (Public Health), Southern Circle.

The post of Personal Assistant to the Sanitary Engineer to Government was held by Sri V. A. Krishnaswami Ayyar, B.E., during the year.

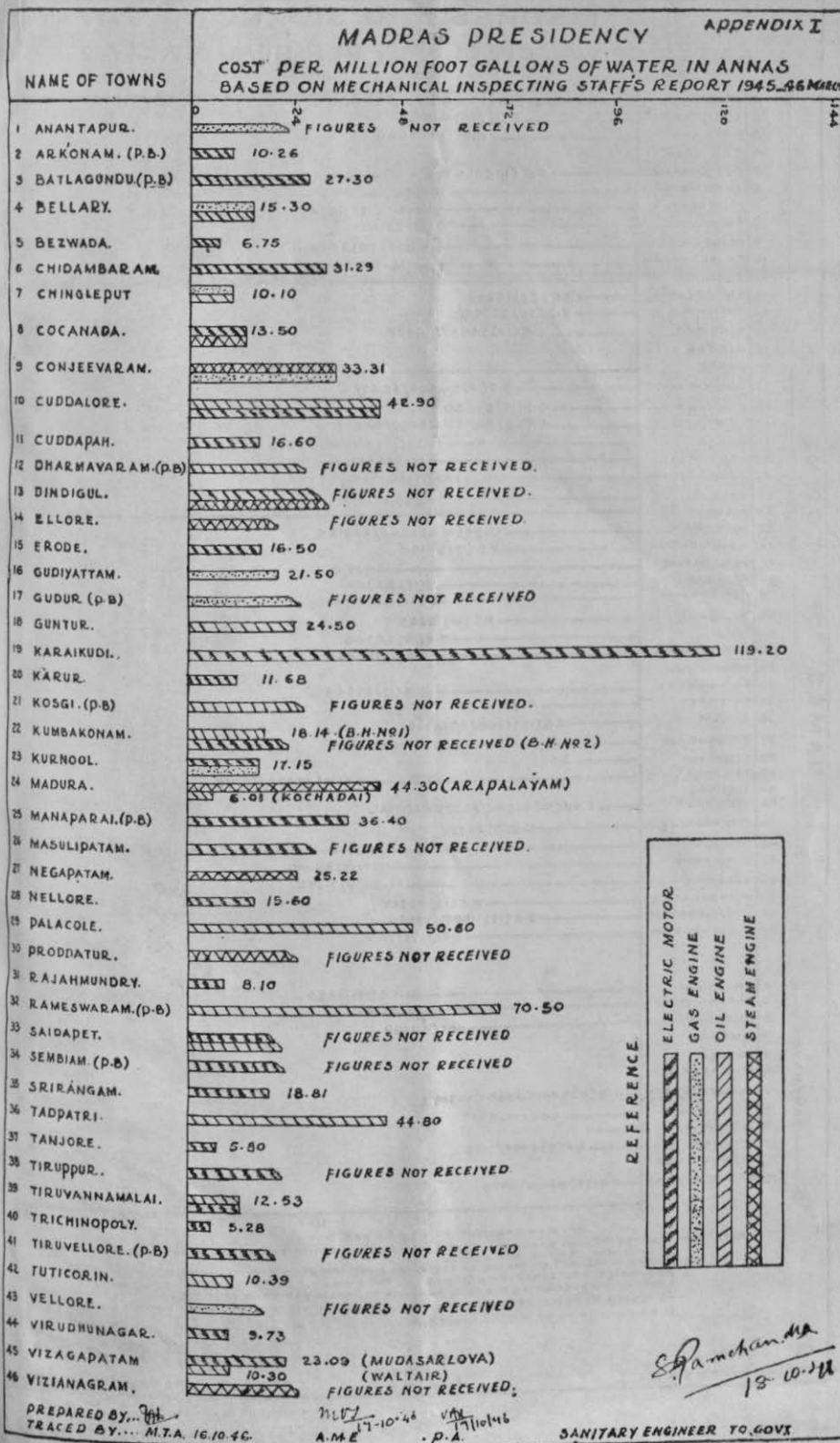
Sri A. Vaidyanathan, B.E. (Mechanical Engineer), GRAD.I.E.E., held the post of Mechanical Expert throughout the year.

The post of Assistant Mechanical Engineer was held by Sri A. K. S. Ayyar (now deceased) from 1st January to 19th March 1945 and Sri A. Vaidyanathan, Mechanical Expert held additional charge of the Assistant Mechanical Engineer's post from 19th March 1945 till the end of the year.

The report of the Mechanical Inspecting staff on the pumping plants in the Municipal and Panchayat Board Water-supply and Drainage works for the period ending 31st March 1946 is also attached.

22nd October 1946.

S. RAMACHANDRA,
 Sanitary Engineer to Government.



MADRAS PRESIDENCY

APPENDIX II

RATES OF WATER SUPPLY PER HEAD PER DAY-1945.

	0	6	12	18	24	30	36
MUNICIPAL TOWNS	1	ADONI.	6.3 (10)	43120	35431		
	2	ANANTAPUR.	5.6 (15)	21482			
	3	BELLARY.	8.3 (10)	56560			
	4	BEZWADA					
	5	BODINAYAKANUR	4.7 (15 GALS FOR 40000)	14084	(IN OPERATION SINCE 16.8.44)		
	6	CHIDAMBARAM	10.4 (15)	26212			
	7	CHINGLEPUT	12.7 (15)	17834			
	8	COCONADA	8.8 (15)	73140			
	9	COIMBATORE	12.7 (20)	200000			
	10	CONJEEVARAM	13.1 (15)	74638			
	11	COONDOOR	17.6 (20)	16000	18783		
	12	CUDDALORE	3.02 (5)	14000			
	13	CUDDAPAH	9.3 (15)	28000	28246		
	14	DINDIGUL	4.6 (10)	34637	56275		
	15	ELLORE					
	16	ERODE			14.4 (15)	39483	
	17	GUDIYATTAM	6.7 (10)	34642	32671		
	18	GUNTUR	4.7 (15)	50520			
	19	KARAIKUDI	4.9 (5)	PARTIAL 5000	28908		
	20	KARUR	10.10 (15)	40000	27578		
	21	KODAIKANAL	12 (20)	46154			
	22	KUMBakonam	7.2 (8)	PARTIAL 17300	67008		
	23	KURNOOL	10.6 (15)	45250			
	24	MADRAS					30.7
	25	MADURA	13.5 (20)	232284	239144		
	26	MASULIPATAM	7.9 (15)	59146			
	27	NEGAPATAM			14.8		
	28	NELLORE	11 (15)	56300			
	29	OOTACAMUND	9.06 (20)	60000	29880		
	30	PALACOLE	7.2 (10)	19869			
	31	PALNI	9.6 (10)	24706			
	32	PERIYAKULAM	11.5 (15)	25882			
	33	PRUDDATUR					
	35	RAJAMUNDRY	11.6 (15)	74564			
	35	SAIDAPET	4.5				
	36	SALEM	2.5 (15)	100000	12902		
	37	SRIKANGAM	5.8 (10)	17000	26676		
	38	TADPATRI	3.4 (5)	15190			
	39	TANJORE			15.3 (15)	66474	68702
	40	TIRUPATI					
	41	TIRUPPUR	2.05 (10)	21392	23099	PARTIAL	
	42	TIRUVANHAMALAI	5.9 (5)	33878			
42	TRICHINOPOLY					23.00 (15)	159566
44	TUTICORIN	13.7 (15)	85000				
45	VELLORE	12.8 (15)	71502				
46	VIRUDUNAGAR	8.5 (10)	34559				
47	VIZAGAPATAM	5.5 (15)	118931	70234			
48	VIZIANAGRAM	9.7 (15)	51749				
PANCHAYAT	1	ARKONAM	12.9 (10)	15484			
	2	BATLAGUNDU	5.5 (5)	7871			
	3	DHARMAVARAM	1.8 (5)	11999			
	4	GUDUR					
	5	KOSIGI					
	6	MANAPARAI					
	7	RAMACHANDRAPURAM	0.5 (5)	3000	2380	PARTIAL	
	8	RAMESWARAM	4.02 (10)	8778			
	9	SEMBIAM	2				
	10	TIRUTHANI	2.8 (5)	5000	7192		
	11	TIRUVELLORE					
	12	YEMMISANUR	0.61 (5)	6000	12670		

NOTE 1-5. FIGURES WITHIN BRACKETS DENOTE RATES PROVIDED IN SCHEMES AS DESIGNED POPULATION FIGURES SERVED/1941 CENSUS ARE NOTED.

2. PLACES IN RESPECT OF WHICH PARTICULARS HAVE NOT BEEN RECEIVED HAVE BEEN LEFT BLANK.
 3. AS PARTICULARS OF WATER SUPPLIED FOR THE 3 MONTHS 1-1-46 TO 31-3-46 ARE NOT AVAILABLE THE RATES OF W.S. SHOWN RELATE ACTUALLY TO THE CALENDAR YEAR 1945 ONLY AND MAY FOR PRACTICAL PURPOSES BE CONSIDERED AS THE AVERAGE FIGURE FOR THE 15 MONTHS ENDING 31-3-46 AS THERE IS NOT LIKELY TO BE MUCH VARIATION.

TECHL SUPDT.

TRACED BY - T.C.S.P. 15.10.46

 V.A.L.
 17/10/46
 P.A. TO S.E.

 SANITARY ENGINEER TO GOVT.
 15.10.46

APPENDIX III.

Report of the Mechanical Inspecting Staff on the Pumping Plants in Municipal and Panchayat Boards' Water-works for 1945.

Serial number.	Name of the station.	Cost per million foot gallons pumped in annas.	Daily average number of hours of pumping.	Maximum number of hours of pumping in a day.	Minimum number of hours of pumping in a day.	Remarks.
<i>Municipalities.</i>						
1	Anantapur .. .. .	..	..	..	..	Figures not yet furnished.
2	Bellary	15.30	24.16	24.00	24.00	(Gas engine and oil engine units.) An oil engine unit was installed in 1943 and is working satisfactorily.
3	Bezwada	6.75	22.20	24.00	7.00	(Electrical units.) The plants worked satisfactorily.
4	Chidambaram	31.20	17.10	24.00	13.00	(Electrical units.) The units worked satisfactorily.
5	Chingleput	10.10	16.00	20.15	9.00	(Electrical and gas units.) Only electrical is in daily commission. Gas engine units are kept as stand-by.
6	Cocanada	13.50	14.30	18.30	11.00	(Electrical and steam units.) Old steam plant is still retained as a stand-by for electrical unit now in operation. These are being replaced by new electrically driven units.
7	Conjeeveram	33.31	27.40	65.00	22.00	(Steam and gas units.) Running cost has risen due to higher cost of fuels (coal and charcoal) and the increasing inefficiency of these old units. These are being replaced by electrically driven units.
8	Cuddalore	42.90	12.50	16.30	7.00	(Electrical and oil engine units.) The units worked satisfactorily.
9	Cuddapah	16.60	12.22	18.10	2.27	(Electrical units.) These are new units installed at Pennar Water-works and worked satisfactorily.
10	Dindigul .. .. .	..	..	..	..	(Steam and electrical units.) Figures not yet furnished.
11	Ellore .. .. .	..	..	..	..	(Steam units.) Figures not yet furnished.
12	Erode	16.50	23.13	24.00	17.15	(Electrical units.) High and low lift electrical units worked satisfactorily.
13	Gudiyattam *	21.50	13.45	22.00	9.45	(Gas engine units.) The units worked satisfactorily.
14	Guntur	24.50	12.00	13.00	12.00	(Oil engine units.) The working cost should be considered satisfactory for the size of plant.
15	Karaikudi	119.20	3.00	5.00	2.00	(Electrical units.) The units worked satisfactorily. The high running cost is due to small size of plant and few hours daily run. Also some major repairs and renewals were carried out during the year.
16	Karur	11.68	15.26	24.00	8.00	(Electrical units.) The units worked satisfactorily.

Report of the Mechanical Inspecting Staff on the Pumping Plants in Municipal and Panchayat Boards' Water-works for 1945—cont.

Serial number.	Name of the station.	Cost per million foot gallons pumped in annas.	Daily average number of hours of pumping.	Maximum number of hours of pumping in a day.	Minimum number of hours of pumping in a day.	Remarks.
<i>Municipalities—cont.</i>						
17	Kumbakonam (bore-hole No. 1).	18·14	9·20	22·00	1·00	(Electrical and oil-engine units.) One electrical unit transferred from bore-hole No. II worked from 24th January to 11th November 1945 in lieu of the oil engine. The unit worked satisfactorily.
18	Kumbakonam (bore-hole No. 2).	..	..	..	..	(Electrical unit.) Figures not yet furnished. The newly installed electrical units at Valespettah headworks worked from 11th November 1945.
19	Kurnool	17·15	19·30	24·00	2·00	(Electrical and gas units.) The plants worked satisfactorily. The gas engine unit is being worked for longer hours due to curtailment in hours of electrical supply by the local electrical power station.
20	Madura (Kochadai)	6·01	13·20	26·50	13·16	(Electrical units.) The units worked satisfactorily and economically.
21	Madura (Arapalaiyam)	44·30	12·30	13·30	13·00	(Steam engine units.) The running cost should be considered satisfactory for the age of the plant and the present high cost of the fuel and lubricating oil.
22	Masulipatam .. .. .	..	..	..	..	(Electrical units.) Figures not yet furnished.
23	Negapatam	26·22	20·15	24·00	16·00	(Steam units.) The high running cost is due to high cost of fire-wood and low quality coal.
24	Nellore	15·60	12·20	19·00	8·30	(Electrical units.) The plant worked satisfactorily.
25	Palacole	50·60	12·43	17·45	10·00	(Oil-engine units.) The plant worked satisfactorily.
26	Proddatur .. .. .	..	..	..	..	(Steam engine units.) Figures not yet received.
27	Rajahmundry	8·10	20·00	24·00	12·00	(Electrical units.) High and low lifts—plants worked satisfactorily.
28	Saidapet .. .. .	..	..	..	..	(Electrical and oil engine units.) Figures not yet furnished.
29	Srirangam	18·81	8·35	15·00	6·00	(Electrical units.) The unit worked satisfactorily.
30	Tadpatri	44·80	11·00	13·30	7·45	(Oil-engine unit.) The high running cost is due to small size of plant and intermittent working.
31	Tanjore	5·80	14·45	20·00	9·25	(Electrical and steam units.) Electrical units run regularly while steam units are kept as stand-by for use during emergency.
32	Tiruppur .. .. .	..	..	..	..	(Electrical units.) Figures not yet furnished.
33	Tiruvannamalai	12·53	8·24	15·30	7·15	(Oil and electrical units.) The electrical units worked satisfactorily. Oil-engine unit was kept as stand-by to be used when an emergency arises.

34	Trichinopoly	2-28	45-3	53-00	41-30	(Three electrical units.) Two of them being run in parallel, one electrical unit is under partial repair condition. The two units were running satisfactorily.
35	Tuticorin	* 10-39	16-00	20-00	5-45	(Oil-engine units.) The units worked satisfactorily.
36	Vellore .. .. .	..	..	..	..	(Gas engine units.) Figures not yet furnished.
37	Virudunagar	9-73	13-30	19-00	8-30	(Electrical units.) The units worked satisfactorily.
38	Vizagapatam (Mudarsolova) ..	23-09	22-45	24-00	7-00	(Oil-engine units.) The plant worked satisfactorily.
39	Vizagapatam (Waltair)	10-30	17-35	21-00	8-00	(Electrical units.) The plants worked satisfactorily.
40	Vizianagram .. .. .	..	..	..	..	(Steam engine units.) Figures not yet furnished.

Panchayat Boards.

1	Arkonam	10-26	16-12	24-00	9-00	(Two electrical units.) The plants worked satisfactorily.
2	Batlagundu	27-30	6-25	10-5	3-00	(Electrical units.) Units worked satisfactorily.
3	Dharmavaram .. .. .	..	..	..	..	(Oil-engine units.) Figures not yet received.
4	Gudur .. .. .	..	..	..	..	(Gas engine units.) Figures not yet received.
5	Kosgi .. .. .	..	..	..	..	(Oil-engine units.) Figures not yet furnished.
6	Manapparai	36-40	8-40	15-30	4-45	(Electrical units.) Units worked satisfactorily. The high running cost is due to short hours of daily run and small size of units.
7	Rameswaram	70-50	4-14	12-00	3-00	(Oil-engine units.) The units worked satisfactorily.
8	Sembiam .. .. .	..	..	..	..	(Electrical units.) Figures not yet furnished.
9	Tiruvallur .. .. .	..	..	..	..	Do. do.
10	Yemmiganur .. .. .	..	..	..	..	(Oil-engine units.) Figures not yet furnished.

Drainage.

1	Bezwada	18-60	7-90	12-20	0-30	(Electrical unit.) The plants worked satisfactorily.
2	Madura	19-08	17-67	21-15	6-45	(Steam engine units.) The plant worked satisfactorily.
3	Rajahmundry	21-50	9-24	14-30	2-10	(Electrical units.) The plant worked satisfactorily.
4	Vellore	69-27	12-51	14-00	3-00	(Gas engine units.) The higher running cost is due to inefficient pumps, bad conditions of the engines and high price of charcoal. These are being replaced by electrical units.

* NOTE.—The capital cost of the plants at the stations are not furnished. Hence running costs worked out and do not include interest on capital and sinking fund annuity.

Government of Madras

EDUCATION AND PUBLIC HEALTH DEPARTMENT

(Public Health)

G.O. No. 2004-A, 9th June 1947

Administration Report—Sanitary Engineer's report for the period from 1st January 1945 to 31st March 1946—Reviewed.

READ—the following papers :—

I

Letter from R. McINTOSH, Esq., Chief Engineer, Public Works Department (General, Buildings and Defence), to the Secretary to Government, Education and Public Health Department, dated 10th December 1946, No. 2089-WPH/46-5.

ADMINISTRATION REPORT—SANITARY ENGINEERING DEPARTMENT FROM 1ST JANUARY 1945 TO 31ST MARCH 1946—NOTE SHOWING PROGRESS MADE ON EXECUTION OF WATER-SUPPLY AND DRAINAGE SCHEMES EITHER BY THE PUBLIC WORKS DEPARTMENT OR BY THE LOCAL BODIES UNDER THE SUPERVISION OF THE PUBLIC WORKS DEPARTMENT.

WATER-SUPPLY SCHEMES.

(a) *Water-supply schemes under execution by the Public Works Department.*

Adoni Water-supply Scheme.—The work was nearing completion. Construction of overhead oil tank had been completed. Fixing a pump for oil tank and telephone wire from Raravi to Adoni remained to be done.

Pollachi Water-supply Scheme.—All works except the construction of pump house, office, store and pumping plant were completed.

Salem (Mettur) Water-supply Scheme.—There was no progress in the work during the year. The expenditure incurred during the year represents mainly the cost of maintenance of head coolies to look after the pipes lying along the trench site and at departmental stores.

Cuddapah Water-supply Scheme.—The whole work had been completed as reported in the last year's report.

Calicut Water-supply Scheme.—Infiltration wells excepting fifth well, syphon connexion excepting communication to the fifth well, R.C. reservoir (High and Low level ones) and laying and jointing 18", 16" and 6" were completed.

Bodinayakanur Water-supply Scheme.—All works were completed and the water works handed over to the municipality as reported in the report of last year.

Guntur Water-supply Scheme.—Land required for Head Works Superintendent's quarters, etc., which was acquired already, leased for short crop in Revenue Department.

Hindupur Water-supply Scheme.—Borings at the site of infiltration wells were in progress for testing the water. Work on the two infiltration wells was to be taken up after samples of water were tested and approved by the Sanitary Engineer.

Guntakal Water-supply Scheme.—Further work was stopped pending investigation by the Sanitary Engineer.

Cochin Water-supply Scheme.—Service reservoir, laying and jointing of pumping main to about 50 feet from the Cochin State main and laying and jointing of distribution system in two zones were completed.

Walajapet Water-supply Scheme.—The work was completed in all respects except fixing of float gauge for suction well and fencing for the reservoir.

Kodaikanal Water-works—Extension to the Observatory area.—All works were completed except fixing up of electric motor and pump.

Tiruppur Water-supply Scheme.—All works, except the erection of third pumping set, were completed.

Mettupalayam Water-supply Scheme.—All works, except fixing of pumps, motors and three fountains were completed.

Kumbakonam Water-supply Scheme.—Syphon line, suction well, motor and pump house, erection of motor for pumps, pumping mains and distribution systems, distribution reservoirs and formation of a metalled road 12 feet wide from headworks were completed and handed over to the municipality.

Voyalpad Water-supply Scheme.—The scheme was postponed for the duration of the war. It is to be renewed in 1946–47 and the estimate was under revision with the Divisional Engineer (Highways), Chittoor.

(b) *Water-supply schemes executed by the municipalities under Public Works Department supervision.*

Cocanada Water-supply Scheme—Part II.—The R.C.C. reservoir work was already completed as reported in the report of last year. As the municipality had no grant during the year under report, the installation of filtration plant was deferred.

Bezwada Water-supply—Rearrangement of distribution system.—The work was postponed till the balance of cast iron pipes and site required become available.

Vellore Water-supply Improvements Scheme.—Work of relaying 12" cast iron duplicate main from the Mundy street to the service reservoir and fixing of two old 12" sluice valves in branches to the two chambers of the service reservoir were completed. Laying the 12" cast iron flanged pipes from the suction well to the pump house, the erection of the pumping plants and electrification of the station were the balance works to be done.

Trichinopoly Water-works—Second instalment.—The work of laying and jointing 14" feeder main was already completed. Further works as per sanctioned schemes had been deferred for the duration of the war. Arrangements were being made to execute the balance of work in 1946–47.

Trichinopoly Water-supply Scheme—Rectification of defects and improvements to the existing connecting pipe line of infiltration system.—The work of connecting the infiltration well No. 1 with the service well was executed during

the year. Laying of fresh connecting pipes was done to a length of 160 running feet out of 308 running feet. The work was nearing completion.

DRAINAGE SCHEMES.

(a) Drainage schemes executed by the Public Works Department.

Tirupati Drainage Scheme—Fifth instalment.—Fifth instalment was completed. Sixth instalment of the scheme is to be taken up in 1946-47 when the municipality can find funds to take up the work.

Chittoor Drainage Scheme (partial).—The work was almost completed except at the tail end for which some more S.W. pipes were awaited.

Coimbatore Drainage Scheme—'A' and 'B' Blocks.—The work in 'A' and 'B' Blocks was completed except fixing some house connexions to man-holes, water-supply connexions to flush tanks and house pipes connexions for house drains.

'C' Block.—The work of laying and jointing of sewers in this block was in progress. More than 60 per cent of the work was completed.

'D' and 'E' Blocks.—In the case of 'D' Block the portion in concreted road crossings and in the case of two blocks, the length of sewer in the Trichinopoly Road has been done.

Sewage Farm.—The laying of sub-soil pipes under the plots was done.

Negapatam Drainage Scheme.—Pumping plant in Pumping Station No. I was kept in working condition. The plant in Pumping Station No. II was erected and electric power connexion to the switch boards was given and excepting for some slight rectification to be done by the firm, the plant was in working condition.

Virudunagar Drainage (Restricted) Scheme.—The work was taken up for execution in 1945-46. During the year under report 12" masonry drain and 50 per cent of pump house work were completed. Excavation of collection well completed and levelling course of concrete laid.

(b) Schemes executed by local bodies under the supervision of the Public Works Department.

Salem Drainage Scheme.—Part of drain No. 137 in the Fifth Instalment area was completed. Tenders were called for and approved for the execution of Part II of the Sixth Instalment Scheme.

Rajahmundry Partial Drainage Scheme.—Construction of drains, motor pump house, storm water drains, etc., completed.

II

From the Chief Engineer, Public Works Department (General, Buildings and Defence), dated 10th March 1947, No. 2089-WPH/46-9.

Order—No. 2004-A, P.H., dated 9th June 1947.

Recorded.

2. Progress in the execution of water-supply and drainage schemes continued to be slow on account of the continuance of war conditions and difficulty in getting the necessary materials.

3. The number of municipal and panchayat water-supply schemes in operation during the period under review continued to be 60 as in the previous year; and the number of municipal drainage schemes in operation also continued to be 7 as in the previous year. No drainage scheme was functioning in any panchayat.

4. The number of protected water-supply schemes under execution during the period was 17 in municipalities and 2 in panchayats. The number of municipal drainage schemes under execution was 5.

5. Under the Post-War Development Programme a five-year plan for the execution of water-supply and drainage schemes has been drawn up including a total of 81 schemes. Work on 41 of these schemes is programmed to be taken up in the first year of the plan, i.e., during 1947-48. Schemes already under execution before the plan was drawn up are also included in it.

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(By order of His Excellency the Governor)

P. S. VISWANATHA AYYAR,
Joint Secretary to Government.

To the Chief Engineer, Public Works Department (General, Buildings and Defence).
 „ Surgeon-General
 „ Director of Public Health
 „ Director, King Institute, Guindy
 „ Librarian, Secretariat Library
 „ Director of All-India Institute of Hygiene and Public Health, Calcutta
 „ Public Health Commissioner with the Government of India

