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Admin. Report on P.W.D.



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PUBLIC WORKS DEPARTMENT

MADRAS PRESIDENCY

ADMINISTRATION REPORT

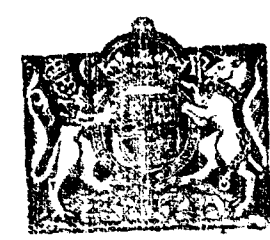
FOR THE YEAR

1926-1927

PART I—WITH A DETAILED REVIEW OF CIVIL WORKS

(Part II—Irrigation will be issued separately)

சென்னைப் பொதுப் பணியுறுத்தல்
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இதன் மூலம் 87 வருடம் (188)
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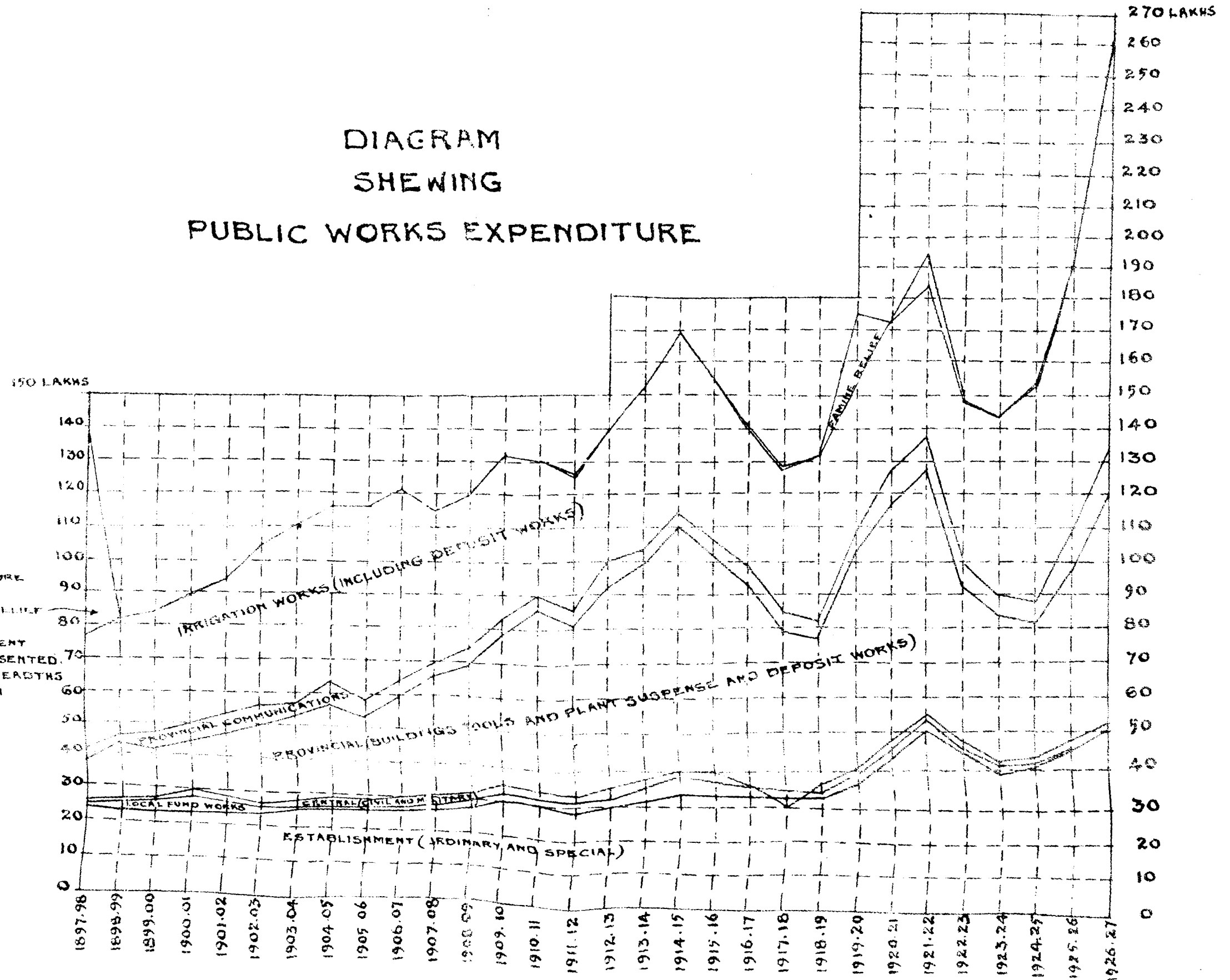
DIAGRAM SHEWING PUBLIC WORKS EXPENDITURE

N.B.

EXPENDITURE ON THE DIFFERENT
HEADS OF ACCOUNT IS REPRESENTED
ON THIS DIAGRAM BY THE BREADTHS
OF THE SPACES BETWEEN
ADJACENT LINES.

TOTAL EXPENDITURE

FAMINE RELIEF



PUBLIC WORKS DEPARTMENT

MADRAS PRESIDENCY

ADMINISTRATION REPORT

FOR THE YEAR 1926-27.

PART I.

I.—DIRECTION.

Mr. C. T. Mullings continued as Officiating Chief Engineer, General and Irrigation, and Mr. W. G. Molesworth as officiating Chief Engineer, Buildings and Roads, till 27th April 1926 afternoon. Mr. Mullings was confirmed as Chief Engineer with effect from 28th April 1926, *vice* Mr. P. Hawkins, C.I.E., A.C.H., M.INST.C.E., Chief Engineer, retired. Mr. Mullings proceeded on leave for 6½ months from 28th April 1926 when Mr. Molesworth took charge of the General Branch also. Mr. R. F. Stoney, Superintending Engineer, Cauvery-Mettur Project circle, was appointed to officiate as Chief Engineer for Irrigation, during the absence of Mr. Mullings on leave, and assumed charge of that office on 27th April 1926 afternoon. Mr. Molesworth who was confirmed as Chief Engineer with effect from the 4th September 1926, *vice* Mr. M. R. Kharegat, ASSOC.M.INST.C.E., Chief Engineer, retired, continued as Chief Engineer, General, Buildings and Roads, till 9th November 1926 forenoon, when Mr. Mullings returned from leave and resumed charge of the office of the Chief Engineer for Irrigation from Mr. Stoney and of the office of the Chief Engineer, General, from Mr. Molesworth. From this date, Mr. Molesworth reverted as Chief Engineer, Buildings and Roads, and Mr. Stoney reverted as Superintending Engineer, Cauvery-Mettur Project (Head Works Circle).

M.R.Ry. Rao Sahib P. Ranganayakulu Nayudu Garu, B.C.E., continued as Deputy Chief Engineer, General, Buildings and Roads, and M.R.Ry. G. Ramaswami Ayyar Avargal, B.A., B.E., as Assistant to the Chief Engineer for Irrigation during the year under report.

II.—ADMINISTRATIVE MEASURES.

During the year under review the designation of the post of Assistant Superintendent, Public Works Stores, Madras, on the sanctioned scale of Rs. 400—40—800 was changed to that of Assistant Superintendent, Public Works Workshops, Madras, and the scale of pay of the post was revised so as to correspond to that of Assistant Executive Engineers of the regular cadre and fixed at Rs. 375—50—525—50/2—575—50—625—50/2—675—50—975. This appointment which had been kept vacant pending the report of the Public Works Workshops Committee was filled during the year.

2. With reference to the recommendations of the Public Works Workshops Committee, the Government sanctioned during the year the creation of the following two gazetted posts on a permanent non-pensionable basis :—

(1) The Assistant Superintendent, Public Works Stores, Madras, on a salary of Rs. 300—20—500 per mensem.

(2) The Junior Superintendent, Workshops, Dowleshwaram, on a salary of Rs. 375—50—525—50/2—575—50—625—50/2—675—50—975.

The existing posts of Subdivisional officer, Workshops subdivision, Godavari Head Works division, and of the Foreman-Superintendent, Dowleshwaram Workshops, on Rs. 250—20—350, have been ordered to be abolished with effect from the date on which the new officer takes charge of the Dowleshwaram Workshops.

III.—ALTERATIONS AND ADDITIONS IN TERRITORIAL CHARGES.

In addition to the Headworks circle constituted in 1925-26, two more Circles of Superintendence, viz., the Canal circle and the Machinery circle, were constituted for the execution of the Cauvery-Mettur Project. A new circle called the Tanjore circle, comprising of the South Arcot division of the old Coimbatore circle, the Cauvery, the Vennar, the River Conservancy and the Special Irrigation division of the old Trichinopoly circle was also constituted mainly for the execution of the programme of works recommended by the Cauvery Committee. Guntur division was reformed taking over the Guntur subdivision from the Kistna Western division and the Tank subdivision from the Godavari Western subdivision. The Kattalai Special division in the Trichinopoly circle, which had been constituted in 1925, was abolished during the year. A new subdivision named the Taptapani Ghat road subdivision was formed late in the year for the execution of the Ghat road works. The Tuticorin water works subdivision, which was abolished in 1922, was also revived during the year.

REVIEW OF CIVIL WORKS.

1.—OFFICE OF THE CHIEF ENGINEER (BUILDINGS AND ROADS).

CONSULTING ARCHITECT'S SECTION.

The number of drawings and schedules of quantities prepared during the year was 210 and 12, respectively, and the value of the work estimated for was about Rs. 26 lakhs excluding approximate estimates prepared for administrative purposes.

The important schemes dealt with in the section were:—

(1) Madras General Hospital—Remodelling of sketch scheme, (2) New court-house for small causes at Madras, (3) Madras University Library, (4) Vizagapatam District Court and (5) Anantapur District Court. Mention may also be made of other minor schemes such as the Guindy Institute, Operation block; and the Vizagapatam Hospital, European ward.

DEPUTY CONSULTING ARCHITECT'S SECTION.

The total number of drawings and schedules of quantities prepared during the year were 138 and 43, respectively, and the total value of work either designed or estimated for, inclusive of educational buildings, amounted to about Rs. 70 lakhs.

The more important schemes dealt with in the section are: (1) Andhra University buildings—Convocation hall and Vice-Chancellor's quarters, Bezwada, (2) Andhra University Honours' College, Rajahmundry, (3) Female Jail, Vellore, (4) Chief Secretariat extensions, (5) Madura Post Office scheme and (6) Presidency Victory Memorial Marina, Madras.

Educational work.

One hundred and three cases were scrutinized during the year. The following type-designs were prepared:—

- (1) Design for a compulsory elementary school providing accommodation for 200 students.
- (2) Design for a non-compulsory elementary school providing accommodation for 200 students.
- (3) Design for a middle school for 200 students.

TECHNICAL SECTION.

One hundred and sixteen (116) estimates of the aggregate value of Rs. 177.88 lakhs were scrutinized in this section during the year, which may be divided under the following heads:—

	NO.	LAKHS.		NO.	LAKHS.
		RS.			RS.
Buildings ...	58	70.12	Bridges and	22	61.00
Water-supply schemes.	17	29.78	Causeways.	7	7.23
Drainage scheme.	3	8.61	Roads ...	9	1.14
			Miscellaneous ...		

The following are the important works estimated to cost over a lakh:—

Buildings.

- (1) Science Block—Physics and Chemistry, Queen Mary's College, Madras.
- (2) Quarantine Cells in Rajahmundry Central Jail.
- (3) Union Mission Training School, Vellore.
- (4) Indian Station Hospital Buildings at Bellary.
- (5) Improvements to Alipuram Jail.
- (6) Union Mission Hospital and Medical College for Women at Vellore.
- (7) New Collector's office at Saidapet.
- (8) Tuberculosis Hospital on the Spur Tank, Madras, Egmore.
- (9) Andhra University scheme at Bezwada.
- (10) Medical College and King George Hospital, Vizagapatam (Ophthalmic Block).
- (11) Court House for the District Judge, Anantapur.
- (12) Municipal College, Salem (Outhouses).
- (13) Messrs. P.S.G. & Sons Industrial Institute, Peelamedu at Coimbatore.
- (14) Government Headquarter Hospital, Coimbatore—Ward of 100 beds including kitchen and covered passages.
- (15) Female Jail, Vellore.
- (16) Board High School, Bapatla.
- (17) Madura General Post Office.
- (18) Cocanada Market Buildings.
- (19) Ramnad Hospital.
- (20) School of Indian Medicine, Hyde Park, Madras.
- (21) Combined Court House, Tuticorin.
- (22) Spinning Mills, Central Jail, Coimbatore.
- (23) Madura Hospital Buildings.
- (24) Headquarters Hospital, Guntur.
- (25) Office and quarters for Superintending Engineer, Tanjore Circle, and Executive Engineer, Metur.

Water-supply schemes.

- (1) Bellary Water-supply scheme.
- (2) Bellary Water-supply scheme extension to Cowl Bazaar.
- (3) Ellore Water-works improvements.
- (4) Coonoor Water-works improvements.
- (5) Coimbatore Water-supply scheme.
- (6) Coimbatore Water-supply scheme headworks.
- (7) Palacole Water-supply scheme.

Drainage scheme.

- (1) Madura Drainage Block No. III.
- (2) Secunderabad Cantonment drainage.

Bridges and Causeways.

- (1) Bridge across the Cauvery at Sivasamudram.
- (2) Coleroon bridge at Trichinopoly.
- (3) Bridge across the Mahanadi at Aska.
- (4) Causeway across the Kundoo river, Cuddapah district.
- (5) Rushikulya bridge.
- (6) Kooda Kadava bridge.
- (7) Improvements to Cauvery bridge at Trichinopoly.
- (8) Irrity bridge—Reconstruction.
- (9) Khan Sahib canal—Reconstruction of bridge.
- (10) Pennar causeway, South Arcot district.
- (11) Bahuda bridge.
- (12) Mahendratana bridge.
- (13) Ginder bridge across the Gadilam.

- (14) Godahodo bridge, Ganjam district.
- (15) Reconstruction of Cauvery bridge at Trichinopoly.
- (16) Bridge over the Keesara Muniyeru.

Roads.

- (1) Itikavalasa-Jeypore road, Vizagapatam Agency—Widening.
- (2) Nadghani Ghat road, the Nilgiris—Storm repairs.
- (3) Taptapani Ghat road, Ganjam—Realignment.
- (4) Anantagiri-Jeypore road, Vizagapatam Agency—Extension to Araku.

Miscellaneous.

No professional circulars of a general interest were issued during the year.

Value of Buildings in charge of the Public Works Department.

The total value of buildings in charge of this department stood at Rs. 8,72,91,767 and the amount spent on their maintenance was Rs. 12,16,719 which is about 1.4 per cent.

ELECTRICAL WORKS.

Works in progress.

Two hundred and twenty-six new works were in progress during the year as against 209 in the previous year, the more important of them being—

- (a) Electric installation to the Military Secretary's Bungalow, Government House, Madras.
- (b) Electric installation to the Leather Trades Institute, Washermanpet.
- (c) Providing electric drive to the Public Works Workshops in place of the steam drive.
- (d) Providing service mains for supplying energy to the offices and quarters on the Jail Hill, Ootacamund.
- (e) Electric installation to the Sub-Jail, Ootacamund.

Works completed during the year.

One hundred and fifty-eight works were completed and the following important works, including works in mufassal stations, are among them :—

Madras.—The electric lift which was removed from the Rayapuram Hospital was re-erected in the General Hospital and brought into use.

Tanjore.—(1) The quarters attached to the Borstal school were provided with electric fittings and an additional electric plant was also installed to cope with the additional demand of electric supply.

(2) A high lift electric centrifugal pump was installed in the deep well at the school for supplying water to the school and also for watering the garden.

Bellary.—(1) An electric installation was provided in the Central Jail to take electric supply from the Bellary Municipal Electric Supply Works.

(2) The electric installation and power plant at the Alipuram Jail was also transferred to this division for periodical inspection and technical advice. The installation was brought up to the Public Works Department standard and a new battery set was installed in place of the worn-out one.

Vizagapatam.—(1) An additional high powered electric plant and an additional battery set were installed in the power house of the King George Hospital at the beginning of the year for supplying current to the electric installation to the New Medical College Buildings.

(2) The electric installation in the New Medical College Buildings was practically completed except wiring for benches in the laboratory.

(3) The 'infectious diseases' sheds attached to the hospital were provided with electric fittings.

Ootacamund.—(1) The work of providing electric fittings in the Secretariat offices and the Connemara Cottage were completed and current was also switched on.

(2) The necessary service lines for supplying electric current to the various quarters on the Stone House Hill were completely erected.

(3) Some of the police stations and quarters were also electrified and were supplied with current.

The following schemes were either under consideration or investigation :—

- (1) Electric installation to the Leper Settlement, Tirumani.
- (2) Do. Central Jail, Coimbatore.
- (3) Do. Central Jail, Vellore.
- (4) Do. to some of the district jails and headquarter hospitals of the Presidency.
- (5) Replacement of the existing punkabs in the General Hospital by electric fans.
- (6) Electric installation to the Collector's Bungalow, Bellary.
- (7) Do. Headquarters Hospital and the Victoria Women's Hospital, Bellary.
- (8) Do. Tuberculosis Jail, Alipuram.
- (9) Do. various clerks' quarters on the Jail Hill, Ootacamund.

The expenditure on original works was Rs. 1,56,999 as against Rs. 1,48,894 during the previous year.

Maintenance.

The total value of all the Government electric installations in charge of this division is estimated at Rs. 24,31,126 and the amount spent on their maintenance and repairs is Rs. 1,29,496 as against Rs. 1,19,421 in the previous year. The charges for maintenance continues to be 5.3 per cent being the same as in the previous year in spite of increase in installations.

General.

The work and activities of the division have been very rapidly increasing owing to the necessity of electric lighting in the district jails and headquarter hospitals in mufassal stations and also to the growth of electric supply companies in places like Madura, Bellary and Bezwada. It is likely that many of the Government buildings in these stations will soon be provided with electric lighting.

II.—WORKS IN PROGRESS.

The total expenditure during the year on works and repairs under all heads, including expenditure on deposit works, but excluding irrigation works, was Rs. 92.57 lakhs as compared with Rs. 82.75 lakhs in the previous year.

The following is a brief description of large works completed or under execution during the year :

BUILDINGS.

King George Hospital, Vizagapatam.—The expenditure during the year was Rs. 1,01,904, and the previous outlay was Rs. 6,92,604. Thus the total outlay to the end of the year was Rs. 7,94,508 against the estimated cost of Rs. 11,12,704.

The works that were in progress during the year are the maternity ward, matrons' and nurses' quarters, additional quarters for servants, engine drivers' quarters, ophthalmic block and compound wall for Assistant Surgeon and Sub-Assistant Surgeon's quarters.

Medical College, Vizagapatam.—The work estimated to cost Rs. 3,22,050, was almost completed, with the exception of water-supply and electrical fittings to the main block.

Medical School and Hospital buildings, Guntur.—The outlay during the year was Rs. 94,890 and the total expenditure was Rs. 97,743 against the estimate of Rs. 9,10,500.

Government Secondary and Training School for Mistresses, Mangalore.—The expenditure during the year was Rs. 7,902 and the previous outlay was Rs. 1,36,808. Thus the total expenditure to the end of the year was Rs. 1,44,710 against the estimated cost of Rs. 1,48,960. The work was almost completed.

Extensions to the Agricultural College and Research Institute, Coimbatore.—A sum of Rs. 26,646 was spent during the year, and the previous outlay was Rs. 3,58,379. Thus the total outlay to the end of the year was Rs. 3,85,025 against the estimated cost of Rs. 4,22,490.

Improvements to the spinning plant in the Central Jail, Coimbatore.—The work is estimated to cost Rs. 4 lakhs and the expenditure thereon to the end of the year was Rs. 1,28,643, the previous outlay being Rs. 15,822.

Additional block, Central Record office, Madras.—The work was begun late in 1925-26, and the total expenditure to the end of 1926-27 was Rs. 64,236 against the estimated cost of Rs. 1,60,416.

Additional blocks for the Rajagopalam Medical School.—A sum of Rs. 26,922 was spent during the year bringing the total expenditure to the end of the year to Rs. 2,98,792 against the estimated cost of Rs. 3,71,125.

A Court-house for the Court of Small Causes, Madras.—A sum of Rs. 23,818 was spent to the end of the year against the estimated cost of Rs. 6,37,400.

Police lines for A-1 and A-2 divisions.—The previous outlay on the work was Rs. 60,173 and the outlay for the year was Rs. 45,661 which brought up the total expenditure to Rs. 1,05,834 against the estimated cost of Rs. 1,51,200. All works except the water and drainage connexions were completed.

Additions and alterations to the Secretariat and Legislative Council Buildings.—This was a new work undertaken during the year. A sum of Rs. 9,070 was spent against an estimated cost of Rs. 1,36,780.

Quarters for the D Division Police.—A sum of Rs. 55,005 was spent on the work during the year, the previous outlay being Rs. 27,407. This brought the total outlay to Rs. 82,412 against the estimated cost of Rs. 1,09,000. The main building was practically completed and handed over to the Police Department.

Lepers Settlement, Tirumani.—Several sub works such as the Dhobykhana, improvements to existing latrines, additional blocks for single lepers; hostel for the untainted and symptom-free children and improvements to the incinerator were completed during the year. The outlay of Rs. 32,267 during the year brought the total expenditure up to Rs. 4,21,436 against the estimated cost of Rs. 4,49,732.

New Court-house for the District Judge, Kurnool.—This was a new work and an expenditure of Rs. 17,828 was incurred against the estimated cost of Rs. 1,22,600.

Quarters for the Armed Reserve Police, Trichinopoly.—One Sergeant's quarters and one line of huts for two head constables and eleven constables were completed. The outlay during the year was Rs. 25,034, the previous outlay being Rs. 1,07,380. This brought the total expenditure up to Rs. 1,32,414 against the estimated cost of Rs. 1,76,400.

COMMUNICATIONS.

Roads.

Widening the Itikavalasa-Jeypore road from 0 to 22 miles.—The work was commenced in 1925-26 and a sum of Rs. 4,289 was spent during that year. An expenditure of Rs. 21,995 was incurred during the year under report which brought up the total outlay to Rs. 26,284 against an estimated cost of Rs. 3,12,000.

Connecting Jeypore-Araku road with Ananthagiri Ghat road.—The expenditure during the year was Rs. 11,653 and that to the end of the year was Rs. 1,55,205 against the estimated cost of Rs. 2,07,530.

Extension of road No. 11 at Murugapettai and Kavanur limits.—The expenditure for the year was Rs. 12,343 and that up to the end of the year was Rs. 1,27,075 against the estimated cost of Rs. 1,35,673. The work was completed during the

Bridges.

Bridge across the Kolab River.—An outlay of Rs. 5,712 was incurred on the work up to the end of the year 1925-26. A sum of Rs. 42,590 was spent on the work during the year under report which brought up the total outlay to Rs. 48,302 against the estimated cost of Rs. 4,56,800.

Kattupozha bridge—Reconstruction.—The work was commenced during the year and a sum of Rs. 7,107 was spent on it against the estimated cost of Rs. 1,15,000.

Converting the old railway bridge over the Hagari river at Bellary into a combined road and railway bridge and constructing an approach road to the bridge.—Fitting of trough plates over the bridge and laying of cement concrete over the trough plate were completed. The trunk road to the bridge and the roadway over the bridge were installed and opened for traffic. An outlay of Rs. 41,992 was incurred during the year bringing the total outlay to the end of year to Rs. 1,92,150 against the estimated cost of Rs. 2,10,250.

Improvements to the Cauvery bridge at Trichinopoly.—The outlay during the year was Rs. 43,395 while the previous outlay was Rs. 1,75,634. Thus the total expenditure to the end of the year was Rs. 2,18,929 against the estimated cost of Rs. 2,21,900. The work was completed during the year.

Reconstructing the Coleroon bridge.—The work was started in 1925-26 and an expenditure of Rs. 51,100 was incurred to end of that year. An outlay of Rupees 3,68,552 was incurred on the work during the year, thus bringing up the total expenditure to Rs. 4,19,652 against the estimated cost of Rs. 14,53,500.

Water-supply and drainage schemes.

The large schemes under execution during the year are shown in section VII.

III.—GRANT AND OUTLAY.

The following figures illustrate the general progress of the work of the department:—

(a) Total expenditure on Provincial, Central, Local and Deposit works during the year, excluding Irrigation works, Establishment, Tools and Plant and Suspense:—

	RS.		RS.
	LAKHS.		LAKHS.
1909-10	53.32	1923-24	73.36 (e)
1919-20	65.10 (a)	1924-25	75.85 (f)
1920-21	79.08 (b)	1925-26	82.75 (g)
1921-22	83.44 (c)	1926-27	92.58 (h)
1922-23	68.07 (d)	1927-28, budget allotment	129.10 (i)

(a) Includes an expenditure of Rs. 1.67 lakhs under Civil officers.

(b) Includes an expenditure of Rs. 2.18 lakhs under Civil officers.

(c) Includes an expenditure of Rs. 3.89 lakhs under Civil officers.

(d) Includes an expenditure of Rs. 5.82 lakhs under Civil officers.

(e) Includes an expenditure of Rs. 4.59 lakhs under Civil officers.

(f) Includes an expenditure of Rs. 2.33 lakhs under Civil officers.

(g) Includes an expenditure of Rs. 2.04 lakhs under Civil officers.

(h) Includes an expenditure of Rs. 1.49 lakhs under Civil officers.

(i) Includes an allotment of Rs. 1.43 lakhs under Civil officers.

(b) Comparison of programme with execution—

Year.	Original budget programme.	Expenditure percentage of budget allotment.	Year.	Original budget programme.	Expenditure percentage of budget allotment.
		More. Less.			More. Less.
1916-17	70,72,584	.. 12.90	1922-23	74,95,000	.. 16.9
1917-18	61,06,034	.. 16.59	1923-24	78,05,563	.. 11.9
1918-19	54,03,725	.. 6.72	1924-25	76,17,225	.. 3.4
1919-20	64,04,060	1.66	1925-26	76,90,129	6.0
1920-21	76,89,390	2.84	1926-27	1,17,69,836	.. 22.5
1921-22	84,77,788	.. 6.16			

NOTE.—The figures include contribution funds but exclude funds at the disposal of Civil officers.

(c) Statement showing the total expenditure under all heads including irrigation, cost of establishment and the percentage of the cost of establishment to total expenditure—

Year.	Total expenditure.	Cost of establishment.	Percentage of cost of establishment to total expenditure.	Year.	Total expenditure.	Cost of establishment.	Percentage of cost of establishment to total expenditure.
1916-17	130-04	32-26	23-99	1922-23	154-60	43-17	27-9
1917-18	128-24	32-47	25-32	1923-24	167-81	38-82	23-10
1918-19	130-15	33-32	25-54	1924-25	178-50	40-79	22-85
1919-20	173-24	36-89	21-28	1925-26	210-46	44-92	21-34
1920-21	172-19	48-06	27-91	1926-27	275-20	50-26	18-26
1921-22	194-40	60-38	31-06				

Statement showing in abstract the appropriation and expenditure in 1926-27 including irrigation works.

Fund and Service heads.	Original appropriation.	Final appropriation.	Actual expenditure.
Civil Works.	RS.	RS.	RS.
Civil Works—			
Central	1,06,000	87,020	85,847
Provincial—Reserved	7,74,000	6,87,822	6,83,696
" Transferred	87,31,400	16,87,686	44,63,646
" Not charged to revenue—Transferred	2,55,300	5,70,800	5,83,277
Non-Government works—			
Local District funds	..	..	..
" Port and Marine funds	..	..	16,17,740
Other deposit works	..	..	17,26,844
Works executed under the Agency function as a standing arrangement—			
Postal works	..	..	98,776
Telegraph works	..	..	419
Archaeological works	..	..	..
Military works	..	..	744
Total, Civil Works, etc.	..	..	92,57,868
Irrigation Works.			
55. Irrigation, navigation, embankment and drainage works—			
Not charged to Revenue	1,17,94,500	63,66,150	60,94,591
XIII. Do. do. do. Working expenses	37,24,800	36,52,630	36,60,745
15. Other revenue expenditure financed from Ordinary revenues	29,55,900	28,84,390	28,83,575
15(1) Other revenue expenditure financed from Farmine insurance grants	92,500	17,930	3,786
16. Construction of irrigation, navigation, embankment and drainage works	..	..	1,00,088
Other deposit works	..	..	..
Total, Irrigation Works	..	..	1,27,42,735
43. Famine-relief works	1,40,000	1,40,000	1,226
Total, Works	..	..	2,20,01,829
Establishment.			
Special Irrigation Survey establishment	1,03,300	90,310	75,703
" 55. Irrigation, navigation, embankment and drainage works—Not charged to Revenue	5,57,000	4,49,670	4,75,627
Ordinary—Reserved	1,23,100	2,03,060	1,86,138
" Transferred	43,00,700	41,66,032	40,44,420
Pensionary charges on irrigation works	2,42,200	2,68,100	2,49,860
Total, Establishment	..	..	50,25,808
Deduct—English Cost of stores	28,54,400	9,68,200	9,92,470
Tools and plant and suspense—Provincial—Transferred	28,300	2,47,370	5,78,601
" Reserved	10,500	9,300	8,893
" 55. Irrigation, navigation, embankment and drainage works—Not charged to Revenue	66,000	1,00,800	6,46,173
Loss by exchange	6,62,600	2,45,813	2,51,765
Grand Total	..	..	2,75,30,604

IV.—MANUFACTURING OPERATIONS.

WALTAIR CIRCLE.

Godavari Head Works division.—The manufacture of surki, bricks, tiles, cement concrete pipes and cement concrete demarcation stones was carried on during the year. The supply of quarry materials required for all the Godavari divisions was continued, large quantities being supplied to the Polavaram Island project work.

Koraput division.—There was some manufacture of lime in the Koraput division also.

BEZWADA CIRCLE.

Godavari Western division.—The manufacture of lime at Chettipet was carried on as in the previous year to meet the requirements of the Godavari divisions.

Kistna Central division.—Surki and ferro-concrete manufacture was continued during the year.

V.—WORKSHOPS.

WALTAIR CIRCLE.

Dowlaisheram Workshops.—The workshops continued to be in charge of a Subdivisional Officer.

The value of work done during the year was Rs. 1,51,457 against Rs. 1,48,498 of the previous year. The extent of work done during the last three years is compared below:—

Heads.	1924-25.	1925-26.	1926-27.
	RS.	RS.	RS.
Works of the Public Works Department	1,15,017	1,35,556	1,30,765
Works of other departments including Port and Marine	10,220	11,935	19,680
Works of private parties including municipalities	2,040	1,007	1,012
	1,27,277	1,48,498	1,51,457

The total number of works executed during the year was 738 against 628 in the previous year. The repairs to the ferry ballacuts of the Godavari Eastern division were carried out as usual in addition to the repairs to floating plant of Godavari Head Works division. The workshop was inspected once during the year, i.e., on 9th September 1926, by the Inspector of Factories. There were no accidents or other matters of general importance. Three apprentices were admitted during the year for practical training.

BEZWADA CIRCLE.

Bezwada Workshops.—The value of work done during the year was Rs. 1,79,095 against Rs. 1,15,290 during 1925-26. The value of work done during the last three years is shown below:—

Heads.	1924-25.	1925-26.	1926-27.
	RS.	RS.	RS.
Provincial works	53,058	28,083	35,137
Works other than Provincial	87,708	87,207	1,43,958
	1,20,766	1,15,290	1,79,095

The number of work-orders placed on the shops for execution during the year was 1,176 against 1,135 in 1925-26 and 972 of 1924-25. The construction of the following floating plant—viz., a number of wooden pinnaces, a steel hull paddle boat, three mild steel punts and a survey nava—was completed during the year.

There was a profit of Rs. 4,081 under general charges during the year as against Rs. 1,055 during 1925-26. The profit was mainly due to the heavy work done on the construction of mild steel punts for River Conservancy subdivision, pinnaces and ballacuts for the Kistna Eastern and Western divisions. The shops were inspected twice during the year by the Inspector of Factories. There were no accidents during

MADRAS CIRCLE.

Presidency Public Works Workshops.—The value of outturn under all the heads during the year was Rs. 4,80,475 against Rs. 3,75,186 in the previous year, resulting in a net increase of Rs. 1,05,289. The amount of work done during the last three years is compared below:—

Heads.	1924-25.	1925-26.	1926-27.
	RS.	RS.	RS.
Public Works Department—Provincial— Civil Works.	1,81,810	2,19,627	2,70,478
Public Works Department—Provincial— Irrigation Works.	1,31,055	1,23,462	1,86,356
Other departments	37,113	33,143	21,760
Military Works and State Railways	712	1,357	713
Private bodies	1,411	946	678
Quasi-public bodies	2,973	651	550
	3,58,071	3,75,186	4,80,475

While there was an increase under Provincial Civil and Irrigation works there was a decrease under all other heads. The decrease was due to the fact that sufficient orders were not placed on the shops by those departments. Further the fall under "Other departments" was also partly due to the fact that cycle repairs were not carried out in the shops in as large numbers as were hitherto done.

The value of plant and machinery at the beginning of the year under report was Rs. 2,08,769 and at its close Rs. 2,05,582.

The total number of orders that were in progress during the year was 2,762 and those during the last quinquennium were as shown below:—

1921-22	...	2,282	1924-25	...	2,315
1922-23	...	2,028	1925-26	...	2,367
1923-24	...	2,089			

Mechanics of the workshops were deputed in one hundred cases on outdoor jobs under the supervision of an outdoor foreman wherever necessary.

The shops were inspected by the Inspector of Factories thrice during the year. There were no serious accidents during the year.

VI.—STORES.

WALT AIR CIRCLE.

Public Works Stores at Dowlaiswaram.—The reserve limit of stock sanctioned for the stores is Rs. 1,62,000. The balance of stock at the end of March 1927 was worth Rs. 1,07,500 against a balance of Rs. 1,27,613 at the end of 1925-26. The receipts and issues during the year amounted to Rs. 6,33,948 and Rs. 6,50,073 respectively.

BEZWADA CIRCLE.

Public Works Stores at Bezwada.—The reserve limit of stock sanctioned for the stores is Rs. 1,65,000. The balance of stock at the end of March 1927 was worth Rs. 1,03,297 against a balance of Rs. 1,27,187 at the end of 1925-26. The receipts and issues during the year amounted to Rs. 6,11,510 and Rs. 6,32,489 respectively.

MADRAS CIRCLE.

Public Works Stores at Madras.—The sanctioned reserve limit of stock for stores was Rs. 20 lakhs. The opening balance of stock for the year 1926 Rs. 10,97,004 and the closing balance Rs. 11,24,728.

The total value of stores received and accounted for during the year compares with that of the previous year as follows:—

	1925-26.	1926-27.
	RS.	RS.
From Director-General of Stores	610	2,962
Local purchase	6,84,628	8,74,422
Stores returned from other divisions and departments	2,43,004	2,81,865
Cash outlay on carriage of stock	4,186	2,517
Total	8,82,428	11,14,768

The total value of stores issued during the year was Rs. 10,37,044.

VII.—WATER-SUPPLY AND DRAINAGE SCHEMES.

Coimbatore Water-supply scheme.

	RS.
Estimate	38,68,256
Grant for the year	19,53,174
Outlay during the year	14,04,265
Outlay to the end of the year	22,27,771

The construction of a store-shed, an engine-house and a machine-shed, quarters for the engine driver and the electrician, and sheds for coolies was completed. The laying of 18 inches gravitation main, the construction of a service reservoir, the erection of tunnelling plant and the construction of quarters for the assistant driver are the important works that were in progress during the period under report.

Bellary Water-supply scheme

	RS.
Estimate	9,41,270
Grant for the year	2,49,280
Outlay during the year	2,29,347
Outlay to the end of the year	8,09,010

Good progress was made on the work during the year. The first stage of the service reservoir was completed. The town was given a temporary supply of water by filling the Mainwaring tank in July 1926, and has been regularly supplied with water since February 1927.

Anantapur Water-supply scheme.

	RS.
Estimate	4,53,200
Grant for the year	32,100
Outlay during the year	16,254
Outlay to the end of the year	4,36,933

The original scheme was already completed and the extension of the scheme to Georgepet was taken up during the year after sanction to an estimate therefor was received. Pipes were indented for and received and their laying was in progress.

Tuticorin Water-supply scheme.

The work was in abeyance pending sanction to the revised estimate and was resumed only in January 1927. A sum of Rs. 11,241 was spent during the year which brought up the total outlay to Rs. 5,57,182 against the estimated cost of Rs. 27,83,765.

Madura Drainage scheme.

	RS.
Estimate	44,25,540
Previous outlay	36,77,427
Outlay during the year	2,97,899
Total outlay to the end of the year	39,75,326

In all the six blocks a little over three miles of sewers and a mile and odd of 4" house connexion pipes were laid during the year. Five hundred and forty-six syphons traps on house connexions, 166 house connexions to sewers and 495 house connexion blocks with temporary arrangements for diverting sullage were fixed. Manholes and flush manholes or tanks were constructed in 30 cases. Thirty lampholes, drop lampholes and drop connexions and seven air inlets and ventilating shafts were completed.

In blocks I and VI two dumping pits and in block III 350 feet of overflow culvert were completed. An outfall manhole fitted with 15" tidal flap door was constructed at the end of block IV overflow.

As regards the progress on sewage disposal works, rough stones were pitched to a length of 2,900 feet to the sewage farm inspection road. Laying of sewers with the construction of necessary manholes, forming of house connexion blocks with temporary diversions and the construction of overflow culverts in blocks I, II and III were completed.

VIII.—SANITARY SCHEMES AND WORKS.

During the year under review the Chingleput water-supply scheme was opened. The service reservoir, Negapatam water-works, was completed and handed over to the municipality.

2. The following schemes were under execution by the Public Works Department :—

- (a) Water-supply schemes for Bellary and Coimbatore.
- (b) Improvements to Cuddapah water-works, Tanjore water-works, Coonoor water-works, Salem water-works and Anantapur water-works.
- (c) Drainage schemes for Vellore and Madura.
- (d) Arrangements were also made to start execution of the Tuticorin water-supply scheme.

3. Improvements to the following water-works were carried out by the municipalities concerned under the supervision of this department :—
Adoni, Vellore (Palar Scheme), Vizagapatam and Cocanada.

4. Plans and estimates for the following schemes in the priority list were prepared and submitted to Government :—

Palacole water-supply, Ellore water-works improvements, Gundakal water-supply, Bellary water-supply (extension to Cowl Bazaar and town extensions) and Yemmiganur water-supply.

5. Plans and estimates for the following works in the priority list were under preparation :—

Madura water-works improvements, third stage, Proddatur water-supply, Erode drainage, Tiruppur water-supply, Bezwada drainage, Tirupati drainage and Rajahmundry water-supply.

Plans and estimates were also under preparation for the construction of an intercepting sewer in the General Hospital and Medical College, Madras, to prevent discharge of sewage into the Cooum.

6. The investigation of the following schemes was either under progress or completed during the year :—

Kumbakonam second borehole, Bodinayakanur water-supply, Tiruppur drainage, Ramnad drainage, Cochin water-supply, Virudhunagar water-supply, Devakottai water-supply, Tiruttani water-supply, Vizianagram drainage, Sembiam water-supply and drainage, Hospet water-supply, Vizagapatam (Mehadrigeedda) water-supply, Vizagapatam drainage and Cuddalore drainage of the Reserve Police Lines.

7. The following miscellaneous works were done :—

(1) Forty-nine minor sanitary works estimated to cost Rs. 4,88,224 were sanctioned or recommended for sanction

(2) The following experiments were continued at the Experimental Filters at the King Institute, Guindy :—

(a) The experiments with 'submerged' and 'non-submerged' sand filters.

(b) Tests on evaporation of water in both the sand and percolating filters.

(c) *Sewage purification experiments.*—The experiments sanctioned in G.O. No. 728 W., dated 1st June 1925, were started in April 1926 and carried out throughout the year. It is proposed to extend the experiments to other sewage disposal works in the City of Madras as directed in the above Government Order.

(d) Proposals were submitted during the year for construction of experimental filters at Kilpauk to carry out experiments with water which is similar to that available at most of the mufassal water supplies and to find out whether results obtained at Guindy are obtainable with such water.

8. Periodical inspections of water-works were made by the Sanitary Engineer and his Deputies, while the Boiler Inspection staffs inspected the pumping plant of the municipal water-works as usual.

9. The annual class in Minor Sanitary Engineering and the six-monthly examinations for Engine Drivers were held. One examination for Head Water-works Filters was held in March 1926.

The boring class was not held for want of sufficient number of entrants.

W. G. MOLESWORTH,
Chief Engineer, General, Buildings and Roads.

Statement showing the appropriations and outlay during 1926-27 under all heads of Civil Works.

Service heads.		Original works.		Repairs.		Total.	
		Appropriations.	Outlay.	Appropriations.	Outlay.	Appropriations.	Outlay.
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
<i>Central.</i>							
Central -							
41. Civil Works -							
	Civil buildings	23,720	22,395	63,300	63,448	87,020	86,847
	Establishment	..	..	..	..	83,200	26,181
	Tools and plant	..	..	..	..	1,280	678
Total, Civil Works—Central ..		..	..	..	..	1,21,500	1,11,556
<i>Provincial.</i>							
Provincial -							
41. Civil Works—Reserved—							
	Civil buildings	1,33,493	1,28,905	2,39,506	2,39,568	3,72,939	3,68,473
	Communications	1,73,773	1,74,352	1,37,050	1,37,050	3,02,823	3,10,253
	Miscellaneous	8,900	4,970	..	..	5,000	4,870
	Establishment	..	..	..	..	2,03,060	2,58,709
	Tools and plant	..	..	..	..	9,300	11,857
	Add—Loss by exchange on English transactions	..	..	..	..	1,013	1,022
	Deduct—English cost of establishment	..	..	..	..	..	..
Total, Civil Works—Reserved ..		..	..	..	..	9,01,195	9,51,262
41. Civil Works—Transferred—							
	Civil buildings	28,96,145	28,09,008	9,28,560	9,13,733	38,21,705	37,22,741
	Communications	2,91,490	2,88,089	4,65,490	4,65,461	7,66,960	7,34,653
	Miscellaneous	6,000	5,956	..	..	6,900	5,956
	Grants-in-aid	..	295	..	..	..	295
	Establishment	..	..	..	..	16,98,432	14,08,313
	Tools and plant	..	..	..	..	60,770	68,648
	Suspense	..	..	..	..	1,42,900	4,79,242
	Add—Loss by exchange on English transactions	..	..	..	..	1,16,000	1,13,631
	Deduct—English cost of stores and establishment	..	..	..	..	4,69,900	4,46,913
Total, Civil Works—Transferred ..		..	..	..	..	60,35,687	60,85,796
43. Famine Relief Works		..	..	..	..	..	1,226
60. Civil Works—Transferred—							
	Civil buildings	2,21,300	2,14,725	..	..	2,21,300	2,14,725
	Communications	8,49,500	3,28,552	..	..	3,49,300	3,38,552
	Establishment	..	..	..	..	2,24,700	1,59,781
	Tools and plant	..	..	..	..	4,000	2,454
Total, 60. Civil Works—Transferred ..		..	..	..	..	8,00,300	7,46,601
Non-Government Works—							
	Port and Marine Works—Civil Works—Works with outlay charges	..	..	..	..	..	16,02,692
	Other Deposit Works—Civil Works—Works with outlay charges	..	..	..	..	..	18,94,337
Grand Total ..		..	..	..	..	..	1,13,88,313

Statement showing a comparison of programme with execution by circles--Civil Works,
1926-27.

Circles	Central and Provincial.				Non-Government works.			
	Final appropriations.	Expenditure.	Percentage of appropriations.		Appropriations.	Expenditure.	Percentage of appropriations.	
			More.	Less.			More.	Less.
Funds administered by	Rs.	Rs.				Rs.		
Superintending Engineers and others—								
Waltair Circle ..	8,30,919	8,03,386	9.43	..	..	1,34,297	..	..
Bezwada Circle ..	3,33,936	3,37,520	1.96	..	..	7,502	..	..
Coimbatore Circle ..	16,68,893	16,35,104	1.45	..	..	10,15,720	..	..
Madras Circle ..	16,14,749	15,71,698	2.74	..	..	2,16,893	..	..
Tanjore Circle ..	2,71,823	2,66,380	2.04	..	..	47,000	..	..
Trichinopoly Circle ..	7,36,374	7,12,463	..	1.48	..	2,94,111	..	..
Electrical Engineer ..	3,21,790	2,83,549	12.49	..	..	..	..	..
Sanitary Engineer ..	..	..	..	..	..	..	..	..
Civil Officers ..	1,66,618	1,49,028	7.8	..	..	..	..	..
Harbour Works ..	340	30,222	..	8.67	..	16,36,457	..	..
Total ..	50,21,262	58,16,865	1.98	..	..	33,48,563	..	..

* Includes appropriations sanctioned to divisions for 41. Civil Works--Central.

Statement showing the length of road communications maintained by public authorities during 1926-27.

Name of division.	Name of district.	Length of roads maintained by Public Works Department.		Length of roads maintained by local authorities.		Total.	
		Metalled.	Un-metalled.	Metalled.	Un-metalled.	Metalled roads.	Un-metalled roads.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ganjam ..	Ganjam ..	M. F. 74 1	M. F. ..	M. F. 857 7	M. F. ..	M. F. 632 9	M. F. ..
Vizagapatnam ..	Vizagapatnam ..	M. F. 1 1	M. F. ..	M. F. 866 7	M. F. 195 2	M. F. ..	M. F. ..
Koraput ..	Koraput ..	M. F. 115 3	M. F. ..	M. F. 76 1	M. F. 78 0	M. F. 1,059 7	M. F. 273 2
Godavari ..	Godavari ..	M. F. 8 0	M. F. ..	M. F. ..	M. F. ..	M. F. ..	M. F. ..
Works.	East district	M. F. ..	M. F. ..	M. F. ..	M. F. ..	M. F. ..	M. F. ..
Godavari Eastern ..	Do.	M. F. ..	M. F. ..	M. F. 582 4	M. F. 444 1	M. F. 687 7	M. F. 573 1
Godavari Northern ..	Do.	M. F. ..	M. F. ..	M. F. ..	M. F. ..	M. F. ..	M. F. ..
Godavari Western ..	West Godavari ..	M. F. 97 3	M. F. 129 0	M. F. ..	M. F. ..	M. F. ..	M. F. ..
Kistna Central ..	Kistna ..	M. F. 0 2	M. F. 2 1	M. F. ..	M. F. ..	M. F. ..	M. F. ..
Kistna Western ..	Guntur ..	M. F. 0 7	M. F. 33 2	M. F. 1,472 1	M. F. 1,351 8	M. F. 171 3	M. F. 1,987 1
Guntur ..	Do.	M. F. 1 0	M. F. ..	M. F. ..	M. F. ..	M. F. ..	M. F. ..
Nellore ..	Nellore ..	M. F. 0 2	M. F. ..	M. F. 794 6	M. F. 263 7	M. F. 795 7	M. F. 263 7
Bellary ..	Bellary ..	M. F. ..	M. F. ..	M. F. 1,959 0	M. F. 123 0	M. F. 1,959 0	M. F. 123 0
Madanapalle ..	Madanapalle ..	M. F. 3 2	M. F. ..	M. F. 331 1	M. F. 17 4	M. F. 338 5	M. F. 17 4
Do.	Chittoor ..	M. F. ..	M. F. ..	M. F. 803 5	M. F. 236 1	M. F. 863 5	M. F. 236 1
Do.	Chittoor ..	M. F. ..	M. F. ..	M. F. 932 0	M. F. 151 0	M. F. 963 6	M. F. 151 0
Kurnool ..	Kurnool ..	M. F. ..	M. F. ..	M. F. 460 9	M. F. 83 3	M. F. 563 7	M. F. ..
Chingelput ..	Chingelput ..	M. F. ..	M. F. ..	M. F. 786 2	M. F. 33 3	M. F. 786 2	M. F. 33 3
South Pondicherry ..	Madras ..	M. F. 2 4	M. F. ..	M. F. 781 3	M. F. 514 34	M. F. 781 3	M. F. 514 34
Salem ..	Salem ..	M. F. ..	M. F. ..	M. F. ..	M. F. ..	M. F. ..	M. F. ..
Channarayana ..	Channarayana ..	M. F. ..	M. F. ..	M. F. 1,055 2	M. F. 511 4	M. F. 1,566 6	M. F. 670 9
Channarayana ..	Nilgiris ..	M. F. 103 0	M. F. 83 1	M. F. 538 5	M. F. 239 5	M. F. ..	M. F. ..
West Coast ..	Malabar ..	M. F. ..	M. F. ..	M. F. 362 5	M. F. 201 1	M. F. 563 6	M. F. ..
North Coast ..	North Kanara ..	M. F. 101 6	M. F. ..	M. F. 1,213 3	M. F. 307 1	M. F. ..	M. F. ..
North Coast ..	North Arcot ..	M. F. ..	M. F. ..	M. F. 493 0	M. F. 927 5	M. F. 1,720 1	M. F. 264 1
South Coast ..	South Arcot ..	M. F. 18 1	M. F. ..	M. F. 908 4	M. F. 326 3	M. F. 1,916 4	M. F. 323 3
Green Coast ..	Do.	M. F. ..	M. F. ..	M. F. 793 3	M. F. ..	M. F. ..	M. F. ..
Do.	Tanjavur ..	M. F. ..	M. F. ..	M. F. 911 1	M. F. 105 0	M. F. 896 1	M. F. 776 3
Do.	Tanjavur ..	M. F. ..	M. F. ..	M. F. 33 5	M. F. ..	M. F. ..	M. F. ..
Every division ..	Do.	M. F. 1 0	M. F. 11 1	M. F. 388 1	M. F. 174 3	M. F. 563 6	M. F. 1,047 1
Yamunapally ..	Do.	M. F. 3 7	M. F. 105 2	M. F. ..	M. F. ..	M. F. ..	M. F. ..
Trichinopoly ..	Trichinopoly ..	M. F. 3 2	M. F. 5 7	M. F. ..	M. F. ..	M. F. ..	M. F. ..
Madurai ..	Madurai ..	M. F. 36 3	M. F. ..	M. F. 711 4	M. F. 383 3	M. F. 811 7	M. F. 282 4
Madurai ..	Madurai ..	M. F. ..	M. F. ..	M. F. 539 0	M. F. 54 1	M. F. 589 0	M. F. 54 1
Chennai ..	Chennai ..	M. F. 2 4	M. F. ..	M. F. 300 2	M. F. 78 5	M. F. 368 3	M. F. 70 5
Total ..	Total ..	M. F. 3,523 24	M. F. 333 8	M. F. 20,554 5	M. F. 3,784 38	M. F. 24,105 6	M. F. 10,286 3

NOTE: - About 1,052 miles of railroads maintained by this department and the cost of their maintenance during the year was about \$6,500,000. Most of these roads are progressive sections (like Great roads) for which a rate of maintenance is made necessary.