M.R.O. I—10,006—28-2-50.

(1) Number of pages _____

(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No. 2640-41	Press
~~B.P.~~ No.	~~Mis.~~
Dated 30-9-1876	~~195~~

Not to be folded or roughly handled

PUBLIC WORKS DEPARTMENT,
FORT ST. GEORGE, 30*th September* 1876.

No. 566.

No. 2,641.

FROM

MAJOR-GENERAL G. W. WALKER, R.E.,
Secretary to the Government of Madras,
Public Works Department,

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,
Public Works Department.

IRRIGATION, No. 63.
Account.

SIR,—I am directed to forward, herewith, a rough estimate of the requirements of the Irrigation Branch for 1877-78, together with a copy of the Proceedings of this Government, No. 2,640, dated 30th September 1876, containing an explanatory note in reference thereto.

I have the honor to be,
Sir,
Your most obedient servant,

Colonel,
Offg. Under Secy. to Govt., P.W.D.

Exd. A. Grubert.
Spare Copies

Admiralty Office

The Dy Ch. Engr. directs that at the head of the 2 money columns of the Rough Scale of April requirements 27-76 now in press the word 'Lakhs' be printed as shewn in fragment attached

W.J. 7/10.

7.2.9

Dr H

9/10

Lakhs	Lakhs
2·05	2·52

P. W. Department - Irrigation Branch

Rough Estimate of outlay for 1877-78.

Ordinary Agricultural

Detail of proposed grants for Minor new Works & Repairs

District	Sub division of Fund	Original Works Minor new Works Proposed Grant for 1877-78 Lakhs	Original Works Minor new Works Grant for 1876-77 Lakhs	Repairs Proposed Grant for 1877-78 Lakhs	Repairs Grant for 1876-77 Lakhs	Remarks
Ganjam	Minor Irrigation	0.05	0.30	0.30	0.29	
Vizagapatam	"	0.02	0.020	0.15	0.19	
Godavery	"	0.12	0.115	0.16	0.152	
Kistna	"	0.10	0.035	0.15	0.052	
Nellore	"	0.10	0.040	0.49	0.369	
Cuddapah	"	0.12	0.120	0.50	0.60	
Kurnool	"	0.20	0.080	0.40	0.40	
Bellary	"	0.08	0.080	0.52	0.52	
Presidency	"			0.03	0.03	
Chingleput	"	0.25	0.200	1.00	0.879	
Northarcot	"	0.20	0.200	1.06	0.865	
Southarcot	"	0.20	0.200	1.20	1.04	
Salem	"	0.15	0.150	0.60	0.53	
Combatore	"	0.09	0.060	0.75	0.705	
Tanjore	"	0.05	0.030	0.84	"	
Trichinopoly	"	0.15	0.080	0.50	0.43	
Madura	"	0.06	0.040	0.50	0.47	
Timevelly	"	0.15	0.150	1.00	0.61	
Malabar	"	0.005	0.005	0.015	0.015	
Total	"	2.095	1.635	10.165	8.167	
Govt. reserve	"	0.50	0.415	"	"	
Total	"	2.595	2.050	10.165	8.167	
Ganjam	River Conservancy	"	"	0.10	0.100	
Godavery	"	"	"	0.314	0.348	
Kistna	"	0.02	"	0.03	0.030	
Nellore	"	"	"	"	0.010	
Cuddapah	"	"	"	0.30	0.100	
14	14	4	4	11	11	

Chingleput	River Conservancy			0.018
South arcot				0.020
Salem				0.010
Combatore				0.050
Tanjore		0.05		0.623
Trichinopoly			0.401	0.400
Madura				0.010
Tinnevelly				0.020
Total		0.07	1.145	1.739
Nellore	Miscellaneous	0.02		
Combatore Kistna		0.005 0.01		
Total		0.025	0.01	
Grand total		2.690	2.060	11.31 9.906

Prepared by
B. R.
clerk
17.10.76

10.10.76.

P. W. Department Irrigation Branch

Rough Estimate of outlay for 1877-78

Revenue

Detail of proposed grants for Extensions & Improvements and Repairs.

Name of System	Extensions & Improvements		Maintenance and Repairs		Remarks.
	Proposed grant for 1877-8	grant for 1876-77	Proposed grant for 1877-78	grant for 1876-77	
	Lakhs	Lakhs	Lakhs	Lakhs	
Godavery Delta	0.15		1.30	1.250	
Kistna Delta	0.10	0.068	1.12	1.100	
Pennair Delta	0.05	0.0597	0.29	0.295	
Chembrumbaukum Tank			0.10	0.123	
Palar Anicut	0.08		0.24	0.360	
Pelandoriar Anicut				0.020	
Cauvery Delta	0.17	017	0.69	0.848	
Sirrugumtum Anicut			0.20	0.170	
Total	0.55	0.2377	3.94	4.166	

Prepared by
B. R. clerk
17.10.76.

10.10.76.

Rough Estimate of the probable requirements of the Madras Presidency on account of Works under the Irrigation Head of Service for 1877-78.

Detail of Funds, Systems, classes &c	Amount of Estimate	Sum that can be expended in 1877-78	Remarks.
Capital Extraordinary			
Works.			
Godavery Delta System.			
Completing the Works in the Eastern Section	14.00	1.20	Item No 4 of Budget of 1876-77
do do do Western do	14.00	1.20	do do do
Total Godavery Delta System		2.40	
Kistna Delta System			
Pullaroo Project. Improvements	1.88	0.02	Item No 3 of Budget of 1876-77
Widening the head of the main Canal.	0.10	0.10	
Eastern Section, Masulipatam.	1.14	0.07	do do
Improvements to Kapres Canal, Eastern Section.	4.14	0.45	do do
do Ellore do	2.23	0.25	Estimate under review - will be disposed of shortly.
do Headworks do	0.10	0.70	Estimate will be disposed of shortly
Kistna Delta System carried forward.		0.89	
Works carried forward.		2.40	
Capital Extraordinary carried forward.		2.40	

Detail of Funds, Systems, Classes &c.	Amount of Estimate	Amount that can be expended in 1877-78	Remarks.
Capital Extraordinary brought forward		2.40	
Works brought forward		2.40	
Kistna Delta System brought forward		0.89	
Completion Project, Kistnakoor Sub Section, Eastern Section	8.90	0.25	Estimates received & will be disbursed shortly
do do Bank Canal, do do	10.22	0.25	Estimates received & under review — do do
Improvements to Head Works and Sluices Western Section	0.10	0.10	Estimate will be disbursed shortly
Completion Project Main Canal, do do	5.84	0.20	Estimates submitted to the Government of India - vide G.O. 3573 - dated 19th December 74 and Govt of India No. 1061 dy. 24th March 75
do do Bank Canal, do do	4.84	0.30	
do do Nizampatam Canal do do	0.30	0.20	
Total Kistna Delta System		2.19	
Gomain Delta System			
Improvements to Sirrapully channel	4.20	0.50	Item No. 18 of Budget of 1876-77. Expenditure upto end of 1875-76 Rs - 4,16,167 Allotment for 1876-77 " - 21,000 Revised estimate promised in October Probable amount Rs 4,37,167
Polandorai Anicut System	2.01	0.15	Revised estimate under preparation
Sivigunatam Anicut System	11.38	0.17	Item No. 39 of Budget of 1876-77
Total Works		5.41	
do Establishment		1.54	
Total Capital Extraordinary		5.95	

Capital Ordinary

Works.

Godavery Delta System

Shutters and gearing to Dowlaishwaram under Sluice		0.05	Experimental screw gear sanctioned - vide G.O. 2574 & 2692 dy 3rd & 20th Septr respectively.
Lock hints. Eastern Delta Section		0.15	Estimates under consideration
do Western do		0.20	
Compensation for lands		0.05	To meet probable demands on account of former works not now in progress.
Total Godavery Delta System		0.45	
Kistna Delta System	0.10	0.10	Sanctioned in G.O. 1115A - 6th May 1876.
Lock hints in the Eastern Section	0.07	0.07	do do do do
do do Western do	0.07	0.07	
Compensation for lands	0.02	0.02	To meet probable demands on account of former works not now in progress.
Total Kistna Delta System		0.16	
Gomain Delta System		0.02	Item No 17 of Budget of 1876-77 — to — Rs. 2,12,500
Lengthening the Kallore Anicut	1.59	0.44	The approximate estimate amounts to Rs. 1,27,786. Detail expenditure upto 31st March 76 — 30,714 Probable expenditure in 1876-77 — 1,58,500
			Rs. 1,89,214
			The revised estimate will be submitted shortly.
Works carried forward		1.05	
Capital ordinary carried forward		1.05	

Detail of Funds, Systems, Classes &c	Amount of Estimate	Sum that can be expended in 1877-78	Remarks.
Capital Ordinary brought forward		1.05	
Works brought forward		1.05	
Salar Amicut System			
Division Sluice for the Thuckaramalloor channel	0.05	0.05	Estimate received & awaiting disposal ~~not yet sanctioned~~
Improving Head Sluice Southern channel	0.05	0.05	do do
do do do of the Makindravady and Tavenipāk channels	0.10	0.10	do do
Total Salar Amicut System		0.20	
1 Chembrumbankum Tank System	4.85	0.56	Item No 27 of Budget of 1876-77
Total Works		1.81	
Proportion of Establishment		0.53	
Tools and Plant		0.11	
		2.45	
Add refunds to Loan Fund Irrigation Works		1.00	
State outlay guaranteed Irrigation Works		0.11	
Total Capital Ordinary		3.56	

Revenue

Extensions and Improvements			
Godavery Delta System		0.15	
Kistna do		0.10	
Pennair do		0.05	
Salar amicut do		0.08	
Tanjore Delta do		0.17	
Total Extensions & Improvements		0.55	
Maintenance Repairs			
Godavery Delta System		1.30	
Kistna do		1.12	
Pennair do		0.29	
Chembrumbankum Tank do		0.10	
Salar amicut do		0.24	
Tanjore Delta do		0.69	
Shevigunkum amicut do		0.20	
Total Repairs		3.94	
		4.49	
Proportion of Establishment		2.29	
Tools and Plant		0.54	
Total Revenue		7.32	

District	Details of Items, Systems, classes &c.	Amount of Estimate	Sum that can be expended in 1877-78	Remarks.
	Ordinary Agricultural			
	Minor Irrigation			
Godavery	Improving Byana calingulah Irrigation	0.113	0.10	Estimate with the Chief Engineer for Irrigation
Triplicane	Madras Water Works Project	12.84	0.80	Item No. 26 of Budget of 1876-77.
North Arcot	Improving supply channel of Cheravanky Tank	0.03	0.03	Estimate received & awaiting disposal
	—do— Poorasay Tank	0.14	0.08	Revised estimate awaited
Coimbatore	Head Sluice for Argoor channel		0.03	Estimates awaited.
	—do— " Nellalore do		0.03	
	Irrigation sluices, Somaralingum channel		0.07	
	Reconstructing Karambady anicut		0.07	
Tinnevelly	Restoring Kodumthorai Tank	0.16	0.16	Estimate received & awaiting disposal
Tinnevelly	Head Sluice and channel for Nengnur & villages	0.14	0.14	Estimates not sanctioned yet — Do — do
Tinnevelly	Tinnevelly channel Head Sluice	0.17	0.05	Item No. 42 of Budget of 1876-77 Sanctioned in G.O. 1642-26th April 1876.
	Mailacalloor Tank	0.11	0.08	Sanctioned in G.O. 3194-11 November 1874.
	Total Minor Irrigation		1.64	
	River Embankments			
Godavery	Raising river banks in the Eastern Delta	57990	0.30	Revised estimate awaited before
	—do— do — Central — do		0.20	—— do —— do awaited
	—do— do — Western — do		0.20	—— do —— do —
	Embankments Polaveram Island	0.62	0.15	Item No. 45 of Budget of 1876-77 Estimate received & sanctioned in G.O. 30 dated 25.1.77
	Embankment from Vijeshwaram to Polaveram	1.49	0.20	Item No. 47 of Budget of 1876-77.
	—Do— from Rajahmundry to Purshottapatnam	1.25	0.10	G.O. 708-18th March 1876.
Nellore	Right Embankment of Pennair from Narimmattakondah to anicut	0.43	0.10	Item No. 51 of Budget of 1876-77
	~~Constructing and improving~~ Right Embankment from Nellore anicut to the sea	0.68	0.48	—"—"— 52 —do— do.
	Total River Embankments		1.73	
	Miscellaneous			
Godavery	Filling in quarry channel through Dowlaich-waram Village	0.07	0.07	G.O. 2515-21st Oct. 1870.
Kistna	Experiments { Concrete / Cement }		0.01	Item No. 5 of Budget of 187
	Total Miscellaneous		0.08	
	Ordinary Agricultural carried forward		3.45	

P.W.D. Madras.

Irrigation Branch.

Abstract of Estimate for works completed on 31st March 1878 and sanctioned with Grants 1876-77 and Allotment 1875-76

Arranged by Tanks and Sluices.

Capital Expenditure	Ayacut Grant entry 1877-78	1876-77	1875-76
Works	5,41,000	36,000	42,429
Establishment	1,51,400	14,520	13,138
Tools and Plant	53,040	49,400	39,626
Total	7,45,440	5,16,000	5,94,243
Less Refunds from Ordinary Operations	15,000	5,000	15,000
Less Collections	10,000		
Total Extraordinary	5,95,440	4,50,000	4,44,243
Capital Ordinary			
Works	1,81,000	36,749	32,062
Establishment	53,000	52,140	95,007
Tools and Plant	19,000	44,650	4,669
Stores Materials & Unworked Stock	10,500	10,500	12,512
	2,55,100	1,43,939	1,44,250
Add Refunds to Com. Funds	3-1,0000	- 1,0000	1,0000
Total Capital Ordinary	3,55,100	1,42,939	1,43,250
Revenue			
Establishment	53,000	29,775	24,378
Repairs	3,94,000	46,604	4,63,957
Establishment	2,29,052	2,24,094	2,36,380
Tools and Plant	54,000	63,700	42,512
Total Revenue	7,32,052	3,64,169	7,67,227

Ordinary Agricultural

Original Works — 6,14,000 4,00,592 3,31,075

Establishment — 1,31,000 99,625 1,05,785

Tools & Plant — 19,278 4,04,105 3,90,019

Total Ordinary Agricultural — 14,031 28,570 18,325

Local Ordinary — 19,57,129 18,23,692 16,03,964

3,45,031 2,22,000 3,11,870

Establishment: 3,45,000 - 1,16,892

Works - 2,69,000 - 2,05,000

Grants 1876-77

Details of Tanks, Sluices, Escapes &c

Estimate of Tank Bund Improvement Amount Spent

Name of Tank

Repairs

Establishment

Total Amount

Repairs to Tank Bund

Establishment

Total Amount

Repairs to Sluices

Establishment

Total Amount

Repairs to Escapes

Establishment

Total Amount

Total Establishment Amount

Total Repairs Amount

Total Amount

Ayacut

P.W.D.
20176

No 195-W.

Encl 2

Note by the Chief Engr for Irrigation

Some entries have been made in the Rough estimate for works the estimates of which have not yet been sanctioned and the following explanations are therefore submitted.

Capital Extraordinary

Kistna Delta System

Eastern Delta

Ellore Canal improvement Rupees 25,000

The estimates have been received, examined and the review of them completed. The papers will be submitted to Government as soon as some information enabling the total under all classes to be shown is received from the Examiners of Public Work Accounts and when the review of other estimates in the same Delta has been completed. The entry has been made to allow of the great want of this Canal

Canal the provision of outlets and inlets for upland drainage and the rectification of the levels being gone on with.

Raising head works and improving Head Sluices Rs 10,000

The estimates for these alterations have not yet been received. The matter is of great importance the high freshes of 1874 having with great difficulty been prevented from breaching into the main Canal.

Ky Kalore Sub section Completion Estimate Rs 25,000

The estimates have been received and will be reviewed shortly. They provide for the completion of Canals which will utilize a considerable part of the water supply obtained by the construction of Ryves canal and the improvement of the Pullery Canal, which are nearly completed. It is undesirable that the works should be postponed longer than is absolutely necessary, because

1st. the water will be available.

2nd. that water if not usefully employed will occasion an increased deposits of silt and enhance the cost of maintenance.

3rd. the interest on outlay already incurred will go on increasing without a corresponding increase of Revenue. Rs 25,000

Bank Canal

The estimates have been received and their review has been nearly completed. The Superintending Engineer asked for Rs 50,000 but it is considered that for the 1st year the sum entered will suffice.

Western Delta

Raising head works and improving head sluices Rs 10000

The remarks above made for the Eastern Delta similar works of the Western Delta are applicable to these. Rs 20,000

Main Canal 30,000

Bank Canal 20,000

Nizamapatam Canal

The estimates were approved in G.O. No 3572 dated 19th December 1874 and submitted to the Government of India by whom sanction was post-

Tr. 106 I
dl. 24 March/78
(Ex. 1338 d/10 May/78)

proved pending the submission of
requisite information on the re-
sults of past and probable results
of future outlay. The results
of past outlay have been shown
in P.W.D. Rc. 1923 dated 28 July 1876
which have been communicated
to the Government of India. Until
Mr. Wilson's investigations shall
have been completed and it is
improbable that any more reliable
information than was given with
the estimates will be forthcoming
and it is by no means certain
that that officer will be able
to throw much light on the
subject. The effect of past ex-
penditure is apparently sufficiently
satisfactory to warrant the im-
provements provided for being
gone on with.

The further postponement of the
Rank Canal improvements is to be
deprecated, because in carrying out

these the river flood embankment
will be concurrently strengthened
and it breached in 1874 and again
this year with a very considerable
resulting damage in addition
to cost of repairs.
The improvements to the main
Canal will take as many years
to complete owing to the canal
being in use for irrigation and
navigation for some 8 or 9 months
annually that it will be likely
to be behind hand if something
be not done in the way of widening
each year for the future. Altogether
only 8000 Rupees are entered for
this section of the delta and as
nearly all the old sanctions have
been worked out it is desirable
that some work should be gone on
with or the trained labour will
be dispersed and will be recollected
with difficulty. There is at least 20
years' work to be done, and a cessation

of work will be sure to cause inconvenience and disappointment.

Capital Ordinary

Salar Amicut System

Improvements to regulating works of north & south channels ... Rs. 20,000

Estimates have been sent in and will be submitted to Government shortly. They provide for correction of defects which have long been apparent.

Ordinary Agricultural

Minor Irrigation

Ryana calingulah irrigation Rs 10,000

The estimates have been received and will be submitted to Government shortly.

The estimates for the rest of the entries on which the orders of Government have not yet been taken, will be submitted immediately.

River Embankments.

The estimates for remodelling the Godavery

the embankments of the Central and Western deltas will be submitted to Government shortly.

The report on the Polavaram Island embankments has been submitted to Government. The whole of the necessary work will cost less than the original estimate already sanctioned. Information on all matters requiring information has been furnished.

Minor Irrigation Works. The amount 2.69 lakhs entered is a little more than half the sum which should be provided annually. The estimates already sanctioned for works which are really emergent is very large and a great deal of information on the subject will be available in support of the Budget estimates.

The entries for maintenance and Repairs under Revenue and for Repairs under Ordinary Agricultural

P.W.D.
20076

together amount to the sum of 15/4 lakhs which was the amount provided for the same work in 1876-77

This rough estimate has been prepared so as to show the amount under each head separately in accordance with the orders governing the arrangement of the Budget estimates and an abstract corresponding to Part I of the Budget has been added

Asst Secy

Major RE.

Dy Chief Engr for Irrign.

Examined

for Chief Engr for Irrign.

26th Sept. 1876

To

The Secretary to Govt PWD.

Cir 28-9-76 Obtd 30-9-76
D.R. Sheet 64 Sept

P.W.D.
20178

From

The Chief Engineer for Irrigation

To

The Secretary to Govt

P. W. D.

Dated 26th Sept. 1876.

Series A

No 195-W.

No 564

Rough Estimate of probable requirements of Agricultural Works in 1877-78 — Note forwarding with explanation in the ——

E. I. Form No. 22.

32 Sheets

No 2640

Public Works Department.

PROCEEDINGS of the MADRAS GOVERNMENT.

UNDER date the 30th Sept 76.

Read the following:—

Note by the Chief Engr for Irrigation — (A.L. No 2638 dt 26 Sept 76)

Ordered that the rough Estimate of the probable requirements of Agricultural Works in 1877-78 be forwarded to the Government of India, and that the following letter be sent

Asst Sec

(A.L. No 2641 dt 30 Sept 1876)

No 2641 dy 30 Sept/76

Sir

I am directed to forward herewith a Memorandum of the Requirements of the Irrigation Branch for 1877-78 together with a Copy of the Proceedings of this Government No. 2640 dated 30 Septr/76 and an explanatory Note in reference thereto.

Asst Sec

23/1

No 511/5

G.O. & appendices
& resp. to Sec. Pub. Wks.
26-10-76
Mis. desp. to Govt of India
with 2 Encls. - 30/9/76
Printed Agreed Copy
Dep. 29/10/76

7044

Govt. of 1876. Madras.

PUBLIC WORKS.

To ~~The Secy to the Govt of India~~

Dated

Issued

Recd. Encl.

G. O., ~~30 Sept~~ 1876, No. ~~2649~~ 2641

Nos. 564/06

Urgent

Print above.

Aug 8

30-9

Rough Estimate of the probable requirements of Agricultural Works in 1877-78 — The — ordered to be forwarded to the Govt of India —

Copy in Mss. 12-10-76