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(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

*P. W.***DEPARTMENT.**G.O. No. 1289Press
~~Mis.~~515-16.

Dated

28418 68

Not to be folded or roughly handled

1

*Proceedings of the Madras Government, Public Works Department,
23rd April 1868.*

No. 515. Read the following letter from the Secretary to the Government of India, Public Works Department, (Account,) to the Secretary to the Government of Madras, Public Works Department, dated Fort William, 14th March 1868, No. 188A —

1. I am directed to acknowledge receipt of your letter No 217, dated 21st January 1868, reporting that detailed estimates are now required for the maintenance of roads in cases where their repairs exceed Rupees 50 per mile, and in reply to express the satisfaction of the Governor General in Council in learning that this measure has been carried out.

2. The Governor General in Council will be glad to receive any further information that the Government of Madras may be able to afford relative to the cost of repairing roads, and the measures to be taken to reduce the charge upon Imperial Funds for this object. It is doubtless very necessary that the roads should be maintained in efficient order; but the large proportion of the funds applicable to Public Works which is devoted to this object seriously diminishes the balance available for advancing the progress of improvement of the country by constructing new works. It is especially necessary, therefore, to insist on strict economy in this branch of the expenditure, and to endeavour, as far as possible, to assign local funds to the relief of the Imperial grants.

3. Connected with this subject I am directed to forward, for the information of the Governor of Madras in Council, a copy of correspondence with the Government of the North-Western Provinces on the subject of the cost of maintaining roads. In reference to this I am to state that it should seem expedient to the Madras Government, the Governor General in Council would wish that a review of the Imperial expenditure, for maintenance of roads in that Presidency, should be made in a somewhat similar manner to that proposed for the North-Western Provinces.

Extract from the Proceedings of the Honorable the Lieutenant-Governor of the North-Western Provinces in the Public Works Department, under date the 24th July 1867.

Copy of a Memorandum from the Controller of Public Works Accounts, North-Western Provinces, to the Secretary to the Government of the North-Western Provinces, Public Works Department, No. 3,957, dated 4th July 1867.

With reference to paragraph 29 of the Orders of the Government of India on the Budget estimate for 1867-68, reducing the grant for repairs by Rupees 78,915,

Moorsun to Kuchla Ghaut	Rs 17,850
Allahabad and Jounpooree road	27,000
	44,850
Aggregate amount composed of items not detailed in orders	34,065
Total reduction	78,915

has the honor to request that he will be good enough to furnish the undersigned with a detail of the items that have been struck out, aggregating Rupees 34,065. The difference between the latter amount and the total amount struck out is already in paragraph 29 as shown in the margin.

Solicits the favor of a reply at his earliest convenience.

(Signed) HARRY MARTEN,
Controller of Public Works Accounts, N.W. P.

No. 1,433 A. of 1867.

ORDER — Ordered, that a copy of the above be forwarded to the Secretary to the Government of India, Public Works Department, for information, with a request that with reference to paragraph 6 of Public Works Department letter No. 532 A, dated the 6th ultimo, this Government may be furnished with further orders on the subject.

(Signed) W. E. MORTON, Colonel, R. E.,
Secy. to the Govt. of N. W. P., P. W. Dept.

From the Secretary to the Government of the North-Western Provinces, Public Works Department, to the Secretary to the Government of India, Public Works Department dated 2nd December 1867, No. 2,711 A:—

1. I am directed to forward, for the information of the Government of India, the accompanying copy of a letter*

* No 407, dated the 8th November 1867.

from the Superintending Engineer, 1st Circle, on the state of the roads in his circle, and the additional funds required during the current year to put them into an efficient condition.

2. With reference thereto I am to remark that this Government is powerless to give the aid sought, the assignment in the current Budget under Civil Buildings and Communications being exhausted, and Local Funds being quite inadequate to meet wants in excess of those that have already to be provided for.

Copy of a letter from the Superintending Engineer, 1st Circle, North-Western Provinces, to the Secretary to the Government of the North-Western Provinces, in the Public Works Department, No. 407 A, dated the 8th of November 1867.

1. Referring to your No. 2,086 A, dated 26th September, I have the honor to forward detailed reports of the state of the roads in this Circle in the 5th and 6th Divisions, Grand Trunk Road and Rohilkhund Trunk Road.

2. In the column of non-indispensible are entered the repairs for which collections are urgently required to be completed this season, and in payment for which a portion of the funds should be granted this year. The column desirable exhibits additional work which ought to be done to keep the roads in really good order, but which under the pressure of the want of funds may be postponed till next year without absolute inconvenience to the public and without permitting the roads to fall actually into irretrievable decay.

SECTION BHOGONG TO GHAZEEABAD.

3. *Fifth Division, Grand Trunk Road.*—Main line of Grand Trunk Road from 227 to 377½ miles, length 150 miles.

On this portion renewals of a part or the whole are urgently required in 37 miles, the aggregate length requiring renewal is 25 miles, or about one-sixth of the whole line.

The cost including consideration of the 8,04,923 cubic feet at Rupees 4 will be

	Rupees	32,197
of which the consolidation	8,050	
and half collection at 3/	12,000	
might be paid for after 1st April.		20,050
Leaving amount now required		12,000

SECTION AGRA TO BHOGONG, 76½ MILES.

Renewals are urgently required in 11 miles over an aggregate length of 10½ or one-seventh of the whole. The cost of the work would be 332,640 cubic feet at 4/ ... 13,300
Of which deducting consolidation and half collection ... 8,300
We have require this year ... 5,000

SECTION ALLYGHUR AND AGRA, 50½ MILES.

Renewals required in 16 miles of an aggregate length of 7½ miles, or one-seventh of the whole.
Cost of work 235,331 cubic feet at 4 Rs. ... 10,414
Deduct consolidation and half collection as above ... 5,833
Required now ... 5,500

SECTION KHOORJA TO BOOLUND SHAHUR AND TO SECUNDOOR, 20½ MILES.

Renewals required on 7 miles, aggregate length 4½ miles, or one-fifth. Cost 134,640 cubic feet at 4 Rs. ... 5,385
Deduct as above ... 3,385

Required now 2,000

TOTAL FUNDS NOW REQUIRED FOR FIFTH DIVISION, GRAND TRUNK ROAD.

	Rs.
Main line —Bhogong to Ghazeeabad	12,000
Bhogong to Agra	5,000
Allyghur to Agra	5,500
Boolundshahur roads	2,000
Total	24,500

4. SIXTH DIVISION, GRAND TRUNK ROAD—SECTION MEERUT TO BOOLUND SHAHUR, WITH THE BABOOGHUR BRANCH, 55 MILES.

Renewals required on 13 miles, of an aggregate length of 10½ miles or one-fifth of the whole—331,486 at average 6½ . . . 19,049
Deduct as above . . . 9,049
Now required . . . 10,000

SECTION MEERUT TO DELHI, 40 MILES.

Renewals required in 16 miles, of aggregate length of 10 miles, or one-fourth of the whole.
Cost 328,760 at average 7-8 . . . 23,000
Deduct as above, consolidation and half collection. . . 12,000
Now required . . . 11,000

SECTION MEERUT TO GURHMOOKHTESSOR, 26½ MILES.

Nothing urgently required.

MEERUT TO MOOZUFFURNUGGUR, 33 MILES.

Seven and three-quarter miles require renewal rather over one-fourth. Cost 2,47,104 at average 5-8 . . . 13,590
Deduct as above . . . 8,590
Now required . . . 5,000

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28th April 1863.*

SECTION MOOZUFFURUNGUR TO ROORKEE, 33 MILES.

Four miles require renewal, one-eighth of the whole.	Rs.
Cost 126,720, average Rupees 14	17,740
Deductions as above	9,740
Now required	8,000

SECTION ROORKEE TO MOOHUN, 28 MILES.

Twelve miles require renewal—nearly half of the road—of this three-fourths of the collection and part consolidation must be done before next season when visitors are going to the hills; the cost amounts to Rupees 34,000, of which a sum of Rupees 24,000 is required this year. Nothing is absolutely required for the Moohun to Rajpore road.

Total funds required for the 6th Division, Grand Trunk Road.

Meerut to Boolundshahur	Rs.
Meerut to Delhi	10,000
Meerut to Moozuffurnuggur	11,000
Moozuffurnuggur to Roorkee	5,000
Roorkee to Rajpore	8,000
	24,000
Total	58,000

ROHILKHAND TRUNK ROADS.

5. The only portion of this division in which renewals are required is the Tigree to Moradabad road. On the remainder expenditure beyond mere petty repairs is much required in filling ruts and reducing inequalities of surface in almost every mile, nothing having been done since the metal was laid three and four years back.

The estimate for renewals of Tigree road amounted to Rupees 25,000, of which required this year Rupees 12,000. On the 74 miles of metalled roads between Bareilly and Futtehghur an expenditure varying from Rupees 200 to 800 per mile is necessary, aggregating Rupees 28,000 only, of which somewhat less than half should be expended this year, say Rupees 12,000.

<i>Total for Rohilkhand Trunk Road.</i>		Rs.
Tigree road	..	12,000
Bareilly road	..	12,000
Total		24,000

General Abstract of sums required this year for the whole Circle.

Year.	Divisions	Amount.
		Rs.
	5th Division, Grand Trunk Road	24,500
	6th Division do.	58,000
	Rohilkhand Trunk Road	24,000
	Total	1,06,500

6. Some parts of the roads undoubtedly of more importance than others; the portions over which fast passenger traffic and the mails go, are most deserving of attention. These are from Meerut to Moradabad, from Delhi through Meerut, and Moozuffurnaggur to Mussorée. If the whole of the money asked for repairs of these

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two lines be not given, it will be impossible to keep them in even moderately good order. The road from Roorkee to Mohun is worn out. It originally had but a thin coat of metal when first made some years back, and this has entirely worn out in many places. There was a great outcry last season about it, but we could only renew four miles. The estimate of funds required for these roads is as above.

In the Rohilkhand Trunk Road.

Tigree to Moradabad	Rs.
	12,000

In the 6th Division Grand Trunk Road.

Meerut to Ghurmookhtsur	Nil.
Meerut to Moozuffurnuggur	5,000
Moozuffurnuggur to Roorkee	8,000
Roorkee to Mohun	24,000
Total	49,000

7. A sum, Rupees 34,000, has already been granted for the 6th Division, Grand Trunk Road, and I have been orally informed by the Executive Engineer, Rohilkhand Trunk Road, that the Local Committee of Moradabad are going to give us assistance on the Tigree line; so I suppose there most urgently required funds are already available.

8. It remains to be decided what shall be done with other parts of the roads.

9. There is a great portion of the 5th Division roads on which an excessive thickness of metal exists. I last year measured every mile in three places, and found 10 inches and 12 inches thickness universal, and frequently as much as 15 and 20 inches. In some miles, however, the top coating has worn, and the surface become very uneven. Hitherto in such case it has been the habit to execute the renewal coat of 4½ inches, and hence the great thickness of metal now on the road. I think if it would be sufficient to pick up the uneven surface and re-consolidate it with 2 inches thickness of new material, the whole of the Bhogong to Agra and Bhogong to Gazerabad roads might thus be treated, but not the Agra to Allighur, where the metal is thin Kunkur met of very good quality.

10. The actual estimate of repairs now required to the 5th Division for a 4½ inches coat, and the reduction that would be effected by supply of 2 inches coat only as above recommended, are here exhibited.

	Estimate, 1867-68.	For second coat.
Bhogong to Gazerabad	32,200	14,300
Bhogong to Agra	13,300	5,900
Agra to Allighur	10,400	10,400
Boolundshahur branches	5,400	2,400
Total	61,300	33,000

11. This system should be applied in the 6th Division, Grand Trunk Road, only on the Meerut to Boolundshahur line, as in all other parts the metal is not over 7 inches or 8 inches thickness. The difference on this portion would be—

	Estimate 1867-68	For second coat.
Meerut to Boolundshahur	19,000	8,500

But even with the introduction of this economical process it is impossible that with

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the funds at our disposal we can keep over roads in order, assuming the grants of this year for this circle to be a fair index of what we may expect in future. The following statement shows what will be the annual expense of keeping up the roads in this circle, estimating that from one-fifth to one-eighth will require removal according to the conditions of traffic, and estimating the renewals at 2 inches thickness as above proposed, and this may then in every respect be regarded as a starvation rate, and I very much fear is insufficient to prevent rapid decay. The maintenance is a distinct charge for petty repairs, and constant attention by working establishment, and it varies according to cost of material from Rupees 12-8 to 20 per mile per mensem.

Statement of cost of maintaining roads in first Circle, Public Works Department.

Road.	Length	Miles of annual renewal	Quantity of Kunkur annually	Cost.		Total.
				Annual renewals.	Maintenance	
Bhogong to Delhi	160	20	2,80,000	11,200	24,000	RS 35,200
Agra to Allyghur	50	8	1,12,000	4,480	7,500	11,980
Gazerabad to Meerut	30	5	1,58,400	11,880	5,400	17,280
Meerut to Moozuffurnuggur ...	33	5½	1,71,200	9,580	5,940	15,520
Moozuffurnuggur to Roorkee ...	33	5½	1,71,200	24,380	9,900	34,280
Roorkee to Rappore	50	10	3,16,800	28,510	12,000	40,510
Futtehghur to Meerut through Bareilly and Moradabad ...	215	31	7,11,000	44,640	43,000	87,640
Meerut to Koorja Secundra ...	75	9½	1,33,000	8,980	11,250	20,230
Agra to Bhogong	77	9½	1,33,000	8,980	11,250	20,230
Shahjehanpur branch road ...	44	4½	1,08,000	4,320	6,600	10,900
Ilattrass and Khasgary	80	8	1,92,000	9,600	12,000	21,600
Total						3,15,370

13. Under no circumstances then can we possibly maintain the roads in our hands. The Budget grants for this head of service amount to about Rs. 2,40,000, about sufficient if the four last items on my list be excluded. I would urge on your consideration whether these lines should not be made over to Local Funds if the Government of India refuse to give more aid from Imperial Funds. If I might offer an opinion I should say that Imperial Funds should maintain all lines of Military or Political importance, and those of merely commercial interest be cared for by local Funds. If this principle be admitted, then the following lines would be truly Imperial in character:—The Grand Trunk Road from Allahabad to Delhi, the road from Agra to Allyghur meeting the Grand Trunk. The road from Delhi through Meerut to Mussooree. The Military road from the Grand Trunk at Gooishagunge through Futtehghur, Bareilly, and Moradabad, to meet all others, are, I think, merely commercial lines, as that from Futtehghur through Mynpooree to Agra—the line from Meerut through Boolundshur to Khoorga. The road from Kuchla ghat to Moorsun towards Muttra, and the two branch roads at Shojhanpoor.

14. This is a question of which I trust you will obtain early solution, because we are falling annually into seriously increasing difficulties, and unless some remedy be applied there must be a collapse.

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23rd April 1868.

15. To recapitulate the matter of more immediate urgency, I submit the following statement of estimate for renewals now required, and funds wanted before 1st April 1868:—

Division.	Total estimate for renewals now urgently required.	Amount required before 1st April.
5th Division, Grand Trunk Road .	61,300	RS 24,500
6th do. do	1,07,400	58,000
Rohilkund Trunk Road	53,000	24,000
Total ..	2,21,700	1,06,500

Of this above stated I have already received from you Rupees 34,000 all the provision in the Budget had been expended previously.

16. Return of the enclosures is requested.

(True Copy.)

(Signed) C F. HODGSON, Lieut.-Colonel, R. E.,
Offg. Secy. to the Govt. N. W. Provinces. P. W. D.

Copy of a letter from the Secretary to the Government of India, Public Works Department, to the Secretary to the Government of the North-Western Provinces, Public Works Department, No. 115 A, dated 24th May 1868

1. I am directed to acknowledge the receipt of your letters as per margin regarding the details of the reduction made in Budget orders from the grant for Repairs Communication, and the additional funds required during the current year for the maintenance of roads in the first Circle, North-Western Provinces.

2. In reply I am to observe that the grant for Repairs Communications was reduced by Rupees 78,915, according to Budget orders, (as modified by paragraph 7 of Public Works letter No. 532 A, dated 6th June 1867,) it being considered that that amount was properly chargeable to Local Funds. But of the reduction thus made, items aggregating Rupees 44,850 only were named by the Government of India as having been struck out of the Budget estimate; a balance of Rupees 34,065 had still to be removed. The particulars of this are now asked for by the Government North-Western Provinces, but the selection of them is, I am to say, left entirely to that Government. But in connection with this subject of the transfer to Local Funds of the charges on account of some of the roads now maintained from Imperial revenues, I am to draw attention to the recommendation made by the Superintending Engineer, 1st Circle, that only lines of Military or Political importance should be kept up at the expense of the State, and to request that the question may be considered in all its bearings, and a full report submitted to the Government of India.

*Proceedings of the Madras Government, Public Works Department,
28th April 1863.*

3. As regards the roads in the 1st Circle, North-Western Provinces, I am to say that it appears from the Superintending Engineer's report on the subject, received with your letter* under acknowledgment, that funds are urgently needed to keep them in proper repair. The Superintending Engineer states his total requirements at Rupees 2,21,700, but proposes to charge the greater portion of the expenditure (viz, half collection and consolidation) to the grant of the coming year. To prevent, however, too great a burden being laid upon the allotment of that year, it seems advisable to place as much money now at the disposal of the Superintending Engineer as can be conveniently spared from the grant of the current year, and this may be provided from the anticipated savings on the grant for establishments as reported in the regular estimate of the year, since except these savings no funds are available.

4. As regards future requirements, the Superintending Engineer expresses an opinion that if the grants of the current year may be taken as a fair index of what may be expected in future, it will not be practicable, even with the most economical arrangements, to keep the roads in good order. It is, I am to say, impossible to deal financially with a matter of this sort in a detached way. The whole sum in question is one of 3½ lacs out of a total grant of Rupees 18,13,000 for Repairs. It is, however, suggested for consideration that the funds allotted might perhaps be made to suffice by

- (1) Reducing the number and cost of the maintenance gang (Nokur-coolies) which at present appear to be excessive.
- (2) Reducing the thickness of all future coats of metal from 4½ inches to 3 inches in cases where the reduced thickness would stand the traffic.
- (3) Diminishing the width of surface to be maintained from 16 feet to 12 feet, or in some cases even to less.
- (4) Using broken stone when practicable at a moderate cost instead of Kunkur, as it is cheaper to maintain and last longer, although somewhat more expensive at first cost.
- (5) Giving up metalling altogether in some of the less important roads or in such parts of them as pass over good soil.

5. The Government of India would wish for a complete report on the entire subject for the whole of the North-Western Provinces. It is to be understood that it is not desired to diminish the efficiency of those roads which must be kept up at the charge of the Imperial revenues. On the contrary they should be kept in good and creditable repair. But possibly such a careful review as that now suggested may lead to the discovery of cases when the cost of the repairs is disproportioned to the public benefit derived from the expenditure; at all events it is proper that a full general investigation should take place before submitting to an outlay which forms no serious a tax on the public resources for continuing the progress of improvement.

*Proceedings of the Madras Government, Public Works Department,
28th April 1863.*

No. 516.

ORDER THEREON, 28th April 1863, No. 1,289.

ACCOUNT, No. 41.

Communicated to the Superintending Engineers, who will obtain from their Range Officers the necessary information regarding the various lines of communication which are maintained from Imperial funds, and submit a full report upon each in the form required by the Government of India, accompanied with such observations and suggestions as they may have to offer.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

To the Superintending Engineers
To Captain Kennedy.
To the Revenue Department.

Exd. T. Cartledge.

*Proceedings of the Madras Government, Public Works Department,
28th April 1868.*

3. As regards the roads in the 1st Circle, North-Western Provinces, I am to say that it appears from the Superintending Engineer's report on the subject, received * No 2,711, dated 2nd November 1867 with your letter* under acknowledgment, that funds are urgently needed to keep them in proper repair. The Superintending Engineer states his total requirements at Rupees 2,21,700, but proposes to charge the greater portion of the expenditure (viz., half collection and consolidation) to the grant of the coming year. To prevent, however, too great a burden being laid upon the allotment of that year, it seems advisable to place as much money now at the disposal of the Superintending Engineer as can be conveniently spared from the grant of the current year, and this may be provided from the anticipated savings on the grant for establishments as reported in the regular estimate of the year, since except these savings no funds are available.

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- (1) Reducing the number and cost of the maintenance gang (Nokur-coolies) which at present appear to be excessive.
- (2) Reducing the thickness of all future coats of metal from 4½ inches to 3 inches in cases where the reduced thickness would stand the traffic.
- (3) Diminishing the width of surface to be maintained from 16 feet to 12 feet, or in some cases even to less.
- (4) Using broken stone when practicable at a moderate cost instead of Kunkur, as it is cheaper to maintain and last longer, although somewhat more expensive at first cost.
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(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

To the Superintending Engineers.
To Captain Kennedy.
To the Revenue Department.

Exd. T. Cartledge.

Extract from the Proceedings of the Honble
the Lieutenant Governor of the N.W. Provinces
in the P.W. Department under date the 24th
July 1867

Copy of a Memo. from the Controller of P.W. Accounts
N.W. Provinces to the Secretary to the Government
of the N.W. Provinces, P.W.D. No 3957 of 4th July 1867.

(With reference to para 29 of the orders
of the Government of India on the Budget Esti-
-mate for 1867-68, reducing the grant for repairs
by Rs 78,915, has the honour to request that
he will be good enough to furnish the under-
signed with a detail of the items that have been
struck out aggregating Rs 34,063. The differ-
-ence between the latter amount and the
total amount struck out is already in
para

P-2711A of 2nd Dec/67.
from Govt. of the NW Pro
to Government of India - "

I am directed to forward for the in-
formation of the Government of India the
accompanying copy of a letter from the Super-
intending Engineer 1st Circle on the state of
the roads in his circle and the additional funds
required during the current year to put them
into an efficient condition.

2. With reference thereto I am to remark
that this Government is powerless to give the
aid sought, the apportionment in the current
Budget under Civil Buildings and Communi-
cations being exhausted and Local Funds being
quite inadequate to meet wants in excess of those
that have already to be provided for.

X
No 1107 of the 8th Nov/67.

para 29 as shown in the margin. *Measures to enable that
the amount of the
of items added in order
to reduction*
Solicits the favour of
of a reply at his earliest convenience.

Sir, Harry Martin
Controller, NW Pro.

No 1433 of 1867

Ordered, that a copy of the above be
forwarded to the Secretary to the Government
of India, NW Pro for information with a request
that with reference to para 6 of 2nd Dec/67
No 1324 of the 6th ult. this Government may
be furnished with further orders on the subject

Order

D.W.
Hyderabad

24th of July 1867.

Sy. H. Martin C.A. NW Pro

Sy. to the Govt. NW Pro

Copy of a letter from the Superintendent
Enquirer 1st Circle St. H. Provinces to the
Secretary to the Government of the St. H. Provinces
in the C. H. Department No 407 A dated
8th of November 1867.

Sir,

Referring to your No 2086 A.
dated 26th September I have the honor
to forward detailed reports of the state of the
roads in this Circle in the 4th and 6th Divisions
Grand Trunk Road and Rohilkhand Trunk
Road.

2^d In the column of now indispensable
entered the repairs for which collections are
urgently required to be completed this season
and in payment for which a portion of the
funds should be granted this year. The col-
lapsible exhibit additional work which
ought to be done to keep the roads in really
good order, but which under the pressure of
the want of funds may be postponed till
next year without absolute inconvenience
to the public and without permitting the roads
to fall actually into irreparable decay.

1992/1283/15

Section Bhogong to Phazabad.

5th Div. } 3rd Main line of L. & S. Road
C. I. Road } from 227 to 377 1/2 miles length 150 miles.

On this portion renewals on a part or the whole are urgently required in 37 miles the aggregate length requiring renewal is 25 miles or about 1/6 of the whole line.

The cost including consolidation of the 804923 cubic feet at Rs 4/1. will be — Rs. — 32197

of which the consolidation — 8050
1 1/2 Collection @ 3/1. — 12000. — 20,050.
might be paid for after 1st April.

Leaving amount now required — 12000
Section, Agra to Bhogong. 76 1/2 miles.

Renewals are urgently required in 11 miles the aggregate length of 10 1/2 or 1/5 of the whole. The cost of the work would be 332640 cubic feet @ 4/1. — 1330560
of which deducting consolidation and half collection, — 83200
— 50000

We have required this year. —

Section Allypore to Agra. 50 1/2 miles.

Renewals required in 16 miles of an aggregate length of 7 1/2 miles or 1/7 of the whole.

Cost of work 235331 cubic feet @ 4 Rs. — 10,414

Deduct consolidation & 1/2 collection — 5833.
— as above

Required now — 5500.

Section Bhogong to Prohlundehar and Secundrah 20 3/4 miles.

Renewals required on 7 miles of an aggregate length of 4 1/2 miles or 1/5 of the whole.
Cost 134640 cubic feet @ 4 Rs. — 5385.

Deduct as above. — 3385.

Required now — 2000.

Total funds now required for 3rd Division C. I. Road.

Main line Bhogong to Phazabad — 12000.

Bhogong to Agra — 5000.

Allypore to Agra — 5500.

Prohlundehar Road — 2000.

Total Rs. — 24500

4th Division Bhogong to Prohlundehar with the Babogher Branch — 55 miles.

Renewals required on 13 miles of an aggregate length of 10 1/2 miles or 1/5 of the whole — 331486 cubic feet @ 4/1. — 19049.

Deduct as above. — 9049

Now required Rs. — 10,000.

Section Meerut to Delhi - 40 miles.

Renewals required in 16 miles of aggregate length of 10 miles or $\frac{1}{4}$ of the whole.

Cost 328760 @ average $\frac{7}{8}$ ——— 23000.

Deduct as above consolidation & $\frac{1}{2}$ collection ——— 12000.

Now required ——— 11000.

Section Meerut to Gurmukh tees 26 $\frac{1}{2}$ miles

Nothing urgently required.

Meerut to Mooryaffurnagga - 33 miles.

$\frac{7}{8}$ miles require renewal rather over $\frac{1}{4}$ ———

Cost 267104 @ average $\frac{5}{8}$ ——— 12590

Deduct as above ——— 8590

now required ——— 5000.

Section Mooryaffurnagga to Roorkie 33 miles.

4 miles require renewal $\frac{1}{8}$ of the whole.

Cost 126720 @ average Rs 14/- ——— 17740.

Deductions as above ——— 9740

now required ——— 8000.

Section Roorkie to Mohun. 28 miles.

$\frac{1}{2}$ miles require renewal - nearly $\frac{1}{2}$ of the road of this $\frac{3}{4}$ of the cost.

next season when visitors are going to the helio. The cost amount to 34000/- of which a sum of 24000/- is required.

Nothing is absolutely required for the Mohun Road.

Meerut to Roorkie ——— 10000.

Meerut to Delhi ——— 11000.

Meerut to Mooryaffurnagga ——— 5000.

Mooryaffurnagga to Roorkie ——— 8000.

Roorkie to Rampore ——— 24000.

Total Rs — 58000.

Rohil-khand Trunk Road.

The only portion of this Division in which renewals are required is the Tiguee to Moredahad Road.

On the remainder expenditure beyond mere petty repairs is much required in filling ruts and reducing inequality of surface in almost every mile nothing having been done since the metel was laid 38 years back.

The estimate for renewal of Tiguee Road amounts to Rs 25000/- of which required this year 12000/-.

On the 44 miles of metalled Road between Baruchy & Lathghur and expenditure varying from 200 to 800 per mile is necessary aggregating

Rs to 28000/- only of which somewhat less than half should be expended this year say Rs

12000/-

Total for Rohil-khand Trunk Road.

Tiguee Road ——— 12000.

Baruchy Road ——— 12000.

Total Rs — 24000.

General Abstract of amount required this year for the whole line.

Division	Amount
Division A. & B. Road	24,500
6th Division road	58,000
Rohilcund Road	24,000
Total Paper	106,500

6. Some parts of the road are doubtless of more importance than others. The portions are the most passing traffic & the mail go all most deserving of attention. These are from Meerut to Allahabad from Delhi through Meerut & Allahabad to Allahabad. If the whole of the money asked for repair of these lines be not given it will be impossible to keep them in good order. The road from Roorkee to Delhi is worn out. It originally had a coating of metal which first cost many lakhs & then has entirely worn out. There was a great outcry last season about it but we could only renew 2 miles. The estimate of funds required for the road is as follows.

In the Rohilcund Trunk Road.

Segree to Meerut Road 12,000

In the 6th Division Road

Meerut to Ghazipur 12,000

Meerut to Allahabad 5,000

Allahabad to Roorkee 8,000

Roorkee to Mohan 24,000

Total Rs. 49,000.

A sum of Rs. 34,000 has already been granted for the 6th Division Road and I have been orally informed by the Executive Engineer Rohilcund Trunk Road that the Local Committee of Meerut are going to give us assistance on the Segree line. I suppose these most urgently required funds are already available. The other part of the road done with the other part of the road. There is a great portion of the 6th Division Road on which an excessive thickness of metal exists. I last year measured 10 miles in some places and found 12" thickness universal & frequently as much as 15" & 20". In some miles however the top coating has worn & the surface become very uneven.

Hitherto in such case it has been the habit to execute the renewal coat of $4\frac{1}{2}$ & hence the great thickness of metal now on the road. I think if it would be sufficient to pick up the uneven surface & re-concrete it with 2" thick mass of new material. The whole of the Bhogong to Agra and Bhogong to Gazeabad Roads might thus be treated but not the Agra to Allahpur where the metal is thin. It is met of very good quality.

10. The actual estimate of repairs now required to the 5th Decr for a $4\frac{1}{2}$ coat & the reduction that would be effected by supply of coat only as above recommended are here exhibited:

	Estimate 1867/68.	1st & 2nd Coat
Bhogong to Gazeabad —	32200	14300.
Bhogong to Agra —	13300.	5900.
Agra to Allahpur —	10400.	10400.
Boolandshahr Branches —	5400.	2400.
Total —	61300.	33000

This system should be applied in the 6th Decr. Grand Trunk Road only on the Murat to Boolandshahr line as in all other parts the metal is not above 7 or 8" thickness. The difference on this position would be —

Murat to Boolandshahr —	19000 —	7500
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But even with the introduction of this economical process it is impossible that with the funds at our disposal we can keep our roads in order assuming the grants of this year for this year to be a fair index of what we may expect in future. The following statement shows what will be the annual expense of picking up the roads in this circle estimating that from $1\frac{1}{5}$ to $1\frac{1}{8}$ will require removal according to the conditions of traffic and estimating the renewals at 2" thickness as above proposed and this may then in every respect be regarded as a starvation rate and a very much fear is insufficient to prevent rapid decay. The maintenance is a distinct charge for petty repairs and constant attention by working establishment and it varies according to cost of material from 12/8 to 20/ per mile per mensem.

Statement of Cost of maintaining roads in ^{Ards} P.F.D.

Road	Miles	Miles per day	Quartry	Cost	Total
Delhi to Delhi	160	20	28000	11200	39200
Agra to Allypore	50	8	112000	4480	116480
Gangawadi to Meerut	30	5	158400	11880	170280
Meerut to Meerutaffur	30	5 1/2	174200	9580	183780
Meerutaffur to Roorkie	35	5 1/2	174200	24380	198580
Roorkie to Roorkie	50	10	316800	2850	319650
Fatehghur to Meerut through Bareilly & Moradabad	215	31	744000	4160	748160
Meerut to Gurgaon & Secundra	75	9 1/2	133000	8980	141980
Agra to Phogong	77	9 1/2	133000	8980	141980
Shahjehanpore Branch Road	44	4 1/2	108000	4320	112320
Natrai & Chasganj	80	8	192000	9600	201600
Total					315320

Under no circumstances then can we possibly maintain the roads in our hands. The Budget grant for this head of service amount to about 240,000/ about sufficient if the last items on my list be included. I would urge on your consideration whether these lines should not be made over to local funds if the Government of India refuse to give more aid from Imperial funds.

If I might offer an opinion I should say that imperial funds should maintain all lines of Military or Political importance and those of merely commercial interest be cared for by Local funds. If this principle be admitted then the following lines would be truly imperial in character. The Grand Trunk Road - from Allahabad to Delhi the road from Agra to from Allahabad to Delhi the road from Agra to Allahabad meeting the grand trunk. The road from Delhi through Meerut to Mussoorie. The Military road from the Grand Trunk at Goochagunge through Fatehghur, Bareilly, and Moradabad - to meet all others are I think merely commercial lines as that from Fatehghur through Muzfpoore to Agra the line from Meerut through Pootundshur to Gurgaon. The road from Kichla ghat to Meerut towards Muttra and the 2 branch roads at Shahjehanpore.

14 This is a question of which I trust you will obtain early solution because we are falling into seriously increasing difficulties and unless some remedy

remedy be applied there must be a collapse.

To recapitulate the matter of more immediate urgency I submit the following statement of Estimate for renewals now required and funds wanted before 1st April 1868

Division	Total Estimate Renewals now urgently required before 1 st April	Amount required
5 th Division Grand Trunk Road	61,000	24,500
6 th Division Grand Trunk Road	1,07,400	58,000
7 th Division Grand Trunk Road	33,000	24,000
Total	2,21,700	1,06,500

Of the above stated I have already received from you Rs 24,000. All the provision in the Budget had been expended previously.

Return of the enclosures is requested.

/ True copy /
By C. H. Hodgson Secy
Off Secy to the Govt NW Provinces

14/1203/60

Copy of a letter from the Secretary to the Govt of India, P.W. Department, to the Secretary to the Government of the North Western Provinces.
P.W. Department No 115 A D 24th May 1868

No 1433 A D 29th July 1867
27th A D 2nd Dec 1867
(with accompaniment)

I am directed to acknowledge the receipt of your letters as per margin regarding the details of the reduction made in Budget orders from the grant for Repairs Communications and the additional funds required during the current year for the maintenance of roads in the 1st circle North Western Provinces.

2. In reply I am to observe that the grant for Repairs Communications was reduced by P.O. 78,915 according to budget orders (as modified by para 7 of P.W. letter No 332 A D 5th June 1867) it being considered that that amount was properly chargeable to Local funds.

funds But of the reduction thus made items aggregating Rs 44,830 only were named by the Government of India as having been struck out of the budget estimates, a balance of Rs 1,34,065 had still to be removed. The particulars of this are now asked for by the Government North Western Provinces, but the selection of them is, I am to say, left entirely to that Government. But in connection with this subject of the transfer to Local funds of the charges on account of some of the roads now maintained from Imperial Revenues I am to draw draw attention to the recommendation made by the Superintending Engineer 1st Circle that only lines of Military or Political importance should be kept up at the expense of the State, and to request that the question may be considered in all its bearings and a full report submitted to the Government of India.

18
21/11/87
As regards the roads in the 1st Circle North Western Provinces, I am to say that when it appears from the Superintending Engineer's Report on the subject received with your letter under acknowledgment, that funds are urgently needed to keep them in proper repair, the Superintending Engineer states the total it is required at Rs 22,700 but proposes to charge the greater portion of the expenditure (viz. collection and consolidation) to the grant of the coming year. To prevent however too great a burden being laid upon the allocation of that year, it seems advisable to place as much money now at the disposal of the Superintending Engineer as can be conveniently spared from the grant of the current year, and this may be provided from the anticipated savings on the grant for Establishments as reported in the Officer's estimate.

Estimate of the year, since except these savings no funds are available.

As regards future requirements the Superintending Engineer expresses an opinion that if the grants of the current year, may be taken as a fair index of what may be expected in future it will not be practicable, even with the most economical arrangements to keep the roads in good order. It is, I am to say, impossible to deal financially with a matter of this sort in a detached way. The whole sum in question is one of 3½-lacs out of a total grant of Rs. 18,30,000 for Repairs. It is however suggested for consideration that the funds allotted might perhaps be made to suffice by,

- 1 Reducing the number and cost of the maintenance gangs (Nokur Coolies) which at present appear to be excessive
- 2 Reducing the thickness of all future coats

coats of metal from 4½" to 3", in cases where the reduced thickness would stand the traffic.

3. Diminishing the width of surface to be maintained from 16 feet to 12 feet, or in some cases even to less.
4. Using broken stone when practicable at a moderate cost instead of Kunkur as it is cheaper to maintain and lasts longer, although somewhat more expensive at first cost.
5. ... Giving up metalling altogether in some of the less important roads or in such parts of them as pass over good soil.

The Government of India would wish for a complete report on the entire subject for the whole of the North Western Provinces. It is to be understood that it is not desired to diminish the efficiency of those roads which must be kept up at the charge of the imperial revenues. On the

the contrary they should be kept in good
and creditable repair. But possibly such
a careful review as that now suggested may
lead to the discovery of cases when the cost
of the repairs is disproportioned to the public
benefit derived from the expenditure, at
all events it is proper that a full general
investigation should take place before sub-
mitting to an outlay which forms no serious
a tax on the public resources for continuing
the progress of improvement.

14/12/88

33
A 1886
Government of India
Public Works Department
To the Secretary to the Government of Madras
Public Works Department
Fort William 14th March 1888
Sir,
I am directed to acknowledge
receipt of your letter c P 217 dated 21st January
1888, reporting that detailed estimates are now
required for the maintenance of roads in
cases where their repairs exceed Rs 50 per mile,
and in reply to express the satisfaction of the
Governor General in Council in learning that
this measure has been carried out.
The Governor General in Council
will be glad to receive any further information
that the Government of Madras may be
able

able to afford relative to the cost of repairing roads and the measures to be taken to reduce the charge upon imperial funds for this object.

It is doubtless very necessary that the roads should be maintained in efficient order. But the large proportion of the funds applicable to public works which is devoted to this object seriously diminishes the balance available for advancing the progress of improvement of the country by constructing new works. It is especially necessary therefore to insist on strict economy in this branch of the expenditure and to endeavour as far as possible to assign local funds to the relief of the imperial grants.

3. Connected with this subject I am directed to forward for the information of the Governor of Madras in C. a copy of

Correspondence

35 2
correspondence with the Government of the North Western Provinces on the subject of the cost of maintaining roads. In reference to this I am to state that it should seem expedient to the Madras Government, the Governor General in Council would wish that a review of the imperial expenditure for maintenance of roads in that Presidency should be made in a somewhat similar manner to that proposed for the North Western Provinces.

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

(W. J. R. A.)
Secy to the Govt of India

17 1860 Dec 10
11 1860 Jan 10
12 1860 Feb 10

From

The day after the
long winter

As I have not
yet received your

letter

Communications
the observations of the
case of another on the
question of education
the change upon whom
receive your for the
maintenance of the
in the University.
1860-1861
With an outline

By

1860
1861

Conduct to the
University, who will
from their Office
the necessary information
regarding the various
communication which are
maintained from England
London, and submit a full
report upon such in the
form of a report of the
University and suggestions as
they may have to offer
1861
1862