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THE GOVERNOR directs the publication, for general information, of the following Report on the transactions of the Public Works Department for the year 1892-93.

By Command,

J. ALLWOOD, Acting Colonial Secretary.

Director of Public Works Office, Jamaica, 8th September, 1893.

Sir,

I have the honour to submit, for the information of His Excellency the Governor, the following report on the work done by the Public Works Department during the financial year which ended on the 31st March last.

2. The total expenditure under all heads was £170,854 15s. 8d., which, excepting the year 1891-92 when it was £236,753 18s. 5d., is much in excess of any previous year since the establishment of the Department. Table I appended to this report gives a summary of the expenditure under the various heads.

ADMINISTRATION.

3. The sum of £18,351 9s. 11d. was paid for salaries, travelling allowances, printing, stationery, postage and office expenses, being equal to 12 per cent. on the cost of the work executed, or to 10.7 per cent. of the total expenditure. That this is so moderate is due to so many new works having been carried out, the cost of supervision being necessarily much heavier in proportion to expenditure on works of maintenance, where the payments are light, than on new works where the payments are heavy.

4. When considering the cost of working the Department, it should be borne in mind that the great bulk of the work is done direct by the Officers of the Department and not by large Contractors, that the works are scattered all over the island, thereby increasing the difficulties and cost of supervision; that a superior class of men are required here to attend to duties which would in England be looked after by foremen, and that a great deal of work on which little or no money is expended—such as inspections, surveys, plans and reports—is done.

5. Formerly there was no charge against the Votes of the Department for postage, printing and stationery which now cost about £1,100 per annum.

MAIN ROADS AND BRIDGES.

6. The cost of maintaining the Main Roads and Bridges (not including the parochial roads taken over under Law 17 of 1890) was £33,917 2s. 2d., and for New Works a sum of £4,290 7s. 5d. was expended, making in all £38,207 9s. 7d. charged to General Revenue under this head.

7. The length remains the same as last year—840 miles—no additions nor deductions having been made. The average cost per mile for maintenance of these roads was £40 7s. 7d., a decrease of 12s. 8d. per mile on the rate for the previous year. St. Mary was highest with £81 7s. 3½d. per mile, and St. James lowest with £26 5s. 10d. This rate it should be noted includes not only the maintenance of the roads proper, but also the repair and rebuilding of Bridges and Culverts, regulating of gully courses, and many other special and minor works of improvement on the roads. The average cost per mile of maintenance proper was £34 11s. 0d.; the highest rate being £55 12s. 5½d. in St. Mary and lowest in Trelawny, where the cost was £25 15s. 5d. per mile.

8. No flood damages of any extent have occurred during the year, although in October and November, 1892, the roads in St. Mary and the northern parts of St. Catherine suffered to a certain extent from this cause. The wet weather in St. Mary from October to February proved trying and expensive to some of the roads in that parish, owing to their soft subsoil, and to the poor quality of the metal available, coupled with the very heavy traffic in bananas going over the roads. In fact, certain roads in St. Mary cannot be maintained in first class order for any reasonable expenditure.

9. The roads were generally in good order during the financial year. Great attention has been

paid throughout the Island to the essential matter of sufficient drainage, and a considerable portion of the maintenance money has been expended in cutting water tables in rock where none had previously existed, thus, to a certain extent, widening the roadway, and at the same time providing efficient drainage, which will tend to lessen the future cost of maintenance. Table II. shews the total sum spent in each parish on road maintenance and on New Works charged to maintenance.

10. At the end of the financial year, only 68 miles, 18 chains, out of the 840 miles of the (original) Main Roads, were under contract, and these to Contractors who had given satisfaction in the maintenance of the roads on former contracts.

11. Preparations have been made for fixing finger posts at the intersections of all Main Roads. The posts have been prepared, but in consequence of the delay in sending out from England the direction plates, which are to be of blue enamelled iron, nothing has been done in the way of erecting them.

12. The following special works of Maintenance and Improvement effected during the year to (original) Main Roads and Bridges in order of Parishes may be noted :—

ST. ANDREW.

13. On the Halfway-Tree road the Norbrook and Halcot Farm Gullies have been regulated, and a bridge built over the former gully. The road from Stony Hill to Tom's River has been much improved by additional water-tables, the bridges on it repaired, and several new culverts put down.

14. On the road from Halfway-Tree to Gordon Town, trenches have been cut to relieve the road of flood water which at times seriously damaged it, and the gradients at Gordon Town have been improved. Further on, on the road from Gordon Town to New Castle, the bridges over the Hope River have been scraped and repainted.

15. On the Windward road, as far as the 10th mile at Bull Bay River, the improvement in the water-tables carried out last year has borne good fruit.

ST. THOMAS.

16. The Johnson River near Morant Bay gave a little trouble, changing its course in a flood, and new fords had to be made. It is this characteristic which led to the abandonment of the idea of bridging the river near the coast. Its bed near Morant Bay, as defined by the ancient banks, is about $1\frac{1}{2}$ miles wide, and the main current may occupy any portion of this width.

17. From Morant Bay to the foot of Quaw Hill via Golden Grove; and on the loop by way of Bath, the bridges have been repainted and the road improved, and from Quaw Hill to Hector's River (the parish boundary), the road, which passes through a rocky white Limestone formation, has been improved by the cutting of inner water-tables in the rock.

18. Many additional pipe drains have been put in the roads, generally, and a large retaining wall erected at Mundicott River. The Nutts River Bridge has also been completed. It has a single span of 76 feet clear water way, and of the same general type as the large bridges recently erected in Portland. The re-building of the Roselle Bridge was also completed.

PORTLAND.

19. The coast road continues through the same limestone formation as in St. Thomas, and has been similarly improved. The material obtained from the water-tables was broken and spread, so that the road was not merely drained but at the same time widened and metalled.

20. On the Interior Road from Port Antonio to Sandy River (known as the Golden Vale road) a large sum has been expended in draining and metalling. This road carries heavy banana traffic and passes through the most rainy district in the Island. It is only three miles long, and at the Port Antonio end the rainfall last year was 111.94 inches, while at the Fellowship end it was 210.72 inches, the mean for the island being 84.70.

21. On the road from the Rio Grande Bridge to Annotto Bay, the Black Hill portion has been improved, and the Hermitage culvert and Mill Tail bridge reconstructed.

22. A large number of additional pipe drains have been inserted in place of objectionable open cross drains and a considerable length of water-table cut in the rock. The protective wall at Eden, to prevent the Swift River encroaching, has been lengthened and strengthened, and has proved its efficacy.

ST. MARY.

23. The Junction road was blocked by landslips due to the heavy October rains. The removal of the debris and the restoration of the road where carried away, created an excess of £313 on the ordinary grant for the maintenance of the road. This road has been improved and made safer both by widening and the cutting of water-tables in rock, and by the erection of parapet walls and fences at precipitous places. The reconstruction of the Middle River bridge, at Annotto Bay, was commenced but was not completed.

24. To the west of the Wag Water the roads were kept in fair order, notwithstanding the heavy October floods and the frequent rains since that time. The extra metal provided for by special grants has been laid down and the roadways raised. On the road from Whitehall to Port Maria, the bridges have been repaired and repainted, and in the town of Port Maria the erection of a new bridge over the Outram River was completed, with the exception of painting. The new bridge, which is of the type recently erected in Portland, is much lower than the old one, and allows of a double line of traffic thus greatly facilitating transport in this most important centre.

ST. CATHERINE.

25. The October rains did considerable damage to some of the roads in the northern part of the Parish, which were, however, put into fair order as speedily as possible, and have so remained for the rest of the year. Between the Natural bridge and the bridge at Kendal, the road has been widened by blasting, and retaining walls built at dangerous places. The Byndloss Gully Ford has been improved, and the Bodles Gully bridge made secure by lengthening the wingwalls and strengthening the foundation of the east abutment.

ST. ANN.

26. A general improvement is noticeable on the roads, due to the cutting of water-tables in rock, although in this Parish, as in the others, much remains to be done in this respect. The Brown's Town road has been diverted, shaped, and metalled where it crosses Green Park Common, thus rendering the track visible at night and saving a quarter of a mile.

27. On the road from White River to St. Ann's Bay, the bridge at Windsor has been underpinned. A small bridge has been built between Brown's Town and Dry Harbour, and two bridges have been renewed between Ocho Rios and Moneague. The iron girder bridge over the Cave River at Greenock has been repaired and repainted. The road through St. Ann's Bay has been improved, and four new culverts built in the Town.

TRELAWNY.

28. The roads have been maintained in good order, and several of them improved by the cutting of water tables in rock. The road from Albert Town to Troy at the line of Manchester, has been maintained for the greater length as a bridle road, its reconstruction as a driving road not having been completed. Three bridges have been repaired between Bengal Bridge and the line of St. James, and a new sea wall has been built on the road between Falmouth and Montego Bay.

ST. JAMES.

29. A temporary bridge has been erected at Running Gut; improvements have been effected to the Main road in the Town of Montego Bay; a culvert has also been built at Barnet Gate. The Adelphi road has been improved by widening and cutting water-tables in rock. Sea walls have been erected at places along the coast road, and on the Long Hill the road has been widened and trenched in rock and additional pipe drains inserted.

HANOVER.

30. The Shettlewood and Roaring River bridges have been repaired and culverts renewed. The Kendal, Haughton Hall and Gray's River bridges have also been underpinned and painted.

31. The River courses have been cleaned and widened, and the Blue Hole Bridge retaining wall underpinned. The Barbican bridge has been rebuilt in iron; much trouble was experienced in getting down the new foundation of screw piles, owing to the presence of old piling in the River bed. The road between Font Hill and Bluefields has been raised and remetalled, additional culverts have been inserted, and watertables cut in rock.

WESTMORELAND.

32. There is not much to record in this parish in the way of improvement on the Main Roads but the difficulties of ordinary road maintenance are always heavy. The river courses have been cleared and small bridges repaired. Additional pipe drains have been laid down between Savanna-la-Mar and Morgan's Bridge.

SAINT ELIZABETH.

33. The roads formerly let by contract have been greatly improved both in drainage and surface. From Shaws to the foot of Spur Tree Hill, and from Lacovia to the foot of Bogue Hill, many of the old wooden cross drains have been repaired and concrete covers substituted, while the hill itself has been cut into at intervals to form passing places for wheeled traffic. The cross trenches have been eased throughout the parish.

MANCHESTER.

34. The roads generally have been improved in cross section, and by additional water tables. The Spur Tree Hill deviation, commenced in the previous year, was completed, and is much appreciated by the travelling public. The road from Davyton to Bamboo has also been completed, but is very little used; there is little horse or foot traffic upon it, and no vehicular traffic whatever.

CLARENDON.

35. The work of improving the drainage was proceeded with, and the roads were kept in good order. The road from May Pen to Chapelton has been widened, inner watertables cut, additional culverts inserted, and parapet walls erected at dangerous places. On the road from Chapelton to Cave Valley, some retaining walls, underscoured by the Ballards River, were underpinned, and the culverts on James Hill repaired. Long retaining walls and groins have been built at Ballards River, and the Wood Gully Bridge has been refloored and otherwise improved. The Park Hall hill has been maintained as well as the steepness of the gradient will admit. Berrydale bridge, near Porus, has been provided with a new superstructure of iron and concrete, and the Jacks Gully approach made safe. The Saint Jago Bridge approaches have been raised and improved, and at Free Town Gully a wall has been built to raise the gully bed and improve the ford.

PAROCHIAL MAIN ROADS.

36. The principal work done by the Department during the year was the reconstruction of the Parochial Roads taken over from the Parochial Authorities under Law 17 of 1890. The expenditure under this head in the financial year 1892-93 was £46,637 10s. 6d. for reconstruction, and £15,838 1s. 10d. for maintenance, in all £62,475 12s. 4d. Of the amount paid for Administration and Supervision £2,878 7s. 0d. is chargeable to the Taxes appropriated under this Law.

37. On March 31st, 1892, the length taken over was 896 $\frac{3}{4}$ miles which had been increased to 955 miles on March 31st last. Table III shews for each parish the total length of roads taken over to the end of the financial year, the total amounts spent on reconstruction and on maintenance, and the total amounts collected.

38. The reconstruction of these roads, which may be called "Parochial Main Roads" being maintained out of Parochial Revenues, will be nearly completed in the financial year 1893-94, but, from time to time, as the collections increase, additional roads will be taken over. In the work of reconstruction, first attention has been generally given to the important matter of drainage, with a view of minimizing as far as possible the destructive effects of heavy rainfall on the roads, and numerous deviations have been made to avoid steep gradients.

39. In many places, however, there are still portions of the roads to be found with gradients so steep as to constitute a very serious impediment to traffic, and it is intended, as opportunity offers and as the funds available admit, to improve objectionable gradients by deviations or otherwise.

40. In many cases it is unquestionable that the general interests of the public would be better served by the improvement in this respect of the roads already taken over, rather than by the taking over of additional lengths of road.

41. The roads which had been reconstructed and taken over for maintenance were, generally, in fair order at the end of the year. Considering, however, the cost of maintaining the old Main Roads, and the fact that in some cases the new Parochial Main Roads are in circumstances altogether more adverse to good maintenance than the old ones, it cannot be expected that, with the limited amount of money available for maintenance, the new ones can be kept in a condition similar to that of the old ones, especially in parishes like Portland, St. Mary, Westmoreland and Clarendon.

42. The average cost per mile per annum for Road Maintenance in the financial year, including the old Main Roads, as well as the new Parochial Roads which were under Maintenance, was £26 7s. 8d., full particulars of the distribution of the expenditure being given in Table IV.

MAINTENANCE OF PUBLIC BUILDINGS.

43. Under this head £8,165 0s. 8d. was spent. The Public Buildings throughout the Island have generally been maintained in good condition, but there are a few which require to be almost entirely rebuilt. The number of buildings, that is, of institutions or establishments—not of separate erections—in charge of the Department during the financial year was 212, consisting of Churches, Court Houses, Prisons, Constabulary Stations, Reformatories, Hospitals, Industrial Schools, Rum Stores, Boat Houses, Work-yards, and other establishments. The number of Churches under the care of the Department at the end of the financial year was 12, the number gradually diminishing as the state-paid incumbents are removed by death or otherwise, when the Churches to which they are attached are handed over to the Incorporated Lay Body.

44. The amounts spent on different buildings have varied greatly, according to the magnitude of the repairs required. Naturally, the heaviest repairs were found necessary on the buildings chiefly constructed of wood, and it is now the practice of the Department to erect buildings of a more substantial and enduring character.

45. Among the chief items of repair during the financial year are the following :—

The Parish Church, Sav.-la Mar, a building entirely of wood, has been repaired and painted throughout, and at St. John's Church, Portland, in Vere—a similar building—thorough repairs, almost amounting to reconstruction, were found necessary, the building having sunk considerably in parts, and being out of line, out of level and out of plumb.

46. At the Court House, Buff Bay, extensive repairs to the roof were carried out, the building having been entirely re-shingled.

47. At the Public Works Office at Falmouth, considerable improvement has been made by the acquisition of the premises formerly in charge of the Customs Officers.

48. At the Sav.-la-Mar Court House, a good deal of work was done, consisting of repairs to wood-work and painting; and the Court House at May Pen has been re-shingled in parts, and heavy repairs to the wood-work of the roof and ceilings carried out.

49. Very considerable repairs were done to the wood-work in the General Penitentiary, under the supervision of the Overseer of Works, and at the Boys' Reformatory at Stony Hill, the Superintendent taking charge of the repairs.

50. The Quarters of the Constabulary Depôt Officer at Spanish Town were re-shingled. At the Falmouth District Prison, the Workshop and Coach-house have been improved, the punishment cells re-roofed, and a considerable amount of painting and colorwashing done. The Constabulary Station at Four Paths—another building erected of wood—has had a large sum spent on it in roof and other repairs.

51. At the Public Hospital, Kingston, extensive repairs were done to the Hospital buildings and to the Medical Superintendent's and Matron's Quarters; and at the Lunatic Asylum nearly £400 was spent, spread over a large number of items, the chief of which were the re-roofing of the Female Range, the renewal of Door Frames (originally of Pitch pine) with hardwood, and other repairs to wood-work.

52. The Public General Hospital at Hordley, an institution in a very rainy district, comprising a large number of buildings all of wood, underwent very extensive repairs, and painting and lime-washing throughout, at a cost of £408; and at the Public General Hospital at Savanna-la-Mar, a close fence of galvanized iron sheeting, supported by hardwood posts, has been substituted for a portion of the old fence of logwood stockades.

53. Many of the buildings at King's House have had repairs done to them; the Customs Boat House at Falmouth has been rebuilt; and at the old Barracks at Montego Bay the outbuildings have been re-roofed, and general repairs and alterations effected to the Main buildings, by which their appearance and utility have been considerably improved. The bridge at the entrance to the Fort Lands at Port Antonio was rebuilt.

NEW WORKS ON PUBLIC BUILDINGS.

54. A sum of £13,641 17s. 6d., was spent during the financial year on New Works and Alterations to Public Buildings.

55. As with the Repairs to Buildings, so with the New Works, a considerable amount was spent in small items, but the chief items of expenditure are as follows :—

56. The Court House, Port Antonio. The work on this building, which is a substantial and fine one and will be a great addition to the Town, was carried far towards completion. The building comprises Judicial and Parochial Offices on the lower floor, and on the upper floor a Court Room and a Town Hall. It is constructed of brick and iron, with tiled roof, so that it may be considered practically proof against fire from without.

57. At the Public Works and Water Police Yard, opposite the Court House, filling and draining have been done, so that the swamp no longer exists; a small sea wall has been built, and the Water Police Station moved further out over the sea.

58. At Ulster Spring, in Trelawny, a substantial stone building, comprising Court House, Revenue Offices and private rooms for the Officers, has been erected, and will prove useful to the inhabitants of this prosperous and rising locality.

59. At Whithorn, in Westmoreland, and at Santa Cruz and at Malvern, in St. Elizabeth, the new Court Houses have been completed. At all these places (excepting Port Antonio), a Constabulary Station forms the lower floor of the building. The Constabulary Station at Kendal, in Manchester, has also been completed, and a Station of similar design was erected at Claremont, in St. Ann. The design which has for some years been adopted for all Constabulary Stations is that of two central cells, one for males and one for females, with verandah in front, and on one side the quarters for the men and on the other side for the Sub-officer in charge. When erected of rubble stone with concrete facings an elliptical arch over the verandah, the effect is a very pleasing one, especially when, as in some cases, a neatly kept little garden surrounds the Constabulary Station. At the Claremont Station, where, in the heart of a limestone country, sand would have been very expensive, white marl was used for the first time in a public building as a substitute for sand in the cement concrete dressings, and with very pronounced success, both in regard to strength and appearance.

60. A sum was provided for a Police Station at Siloah in St. Elizabeth, but, as the Inspector-General of Police thought it should be built near the railway station, nothing could be done, as the site for the railway station had not been fixed.

61. The extensions and enlargement of the District Prison at Spanish Town have been continued during the year, under the supervision of the Overseer of Works at the General Penitentiary, the Superintendent of the Prison, and of the Officer of this Department.

62. At the Lunatic Asylum, further work has been undertaken in carrying out the scheme of enlargement decided on some years ago, in the erection, to the north of the Female Wards, of a Laundry, with Sewing, Ironing and Sorting rooms. This work was not brought to completion by the end of the financial year.

TELEGRAPH LINES.

63. The Telegraph lines throughout the Island have been maintained generally in a fair state of efficiency, although in some parts less so than in others, owing principally to originally hurried construction and to the effects of climate and locality. Where, as in Manchester, and some parts of Clarendon, St. Elizabeth, Westmoreland and St. Ann, poles of sawn hardwood, or where iron poles or poles of pitch pine with good cashaw footings have been in general use, the lines have given but little trouble, but the experience of the Department has now shewn that rough round poles, such as those with which the lines were originally constructed, are not to be relied on, even when of woods generally considered hard and durable, the fact being that in most cases they are but young trees, very little removed from large saplings, and, consequently, the greater part of the material in them is sapwood, which rapidly decays when the pole is set in the ground, leaving the portion of the pole exposed to the greatest strain least fitted to bear it. Endeavours have been made, as far as the grants for maintenance of the lines allow, to remodel and improve them by the erection of more durable poles, the adoption of copper wire in places exposed to sea influences, and in other ways.

64. The number of miles of line—mainly single wire line—under maintenance at the end of the financial year was divided among the parishes as shewn in Table V. which shews also the cost per mile for maintenance and the number of interruptions or “faults” occurring on the lines or in the Telegraph offices during the year. It should, however, be borne in mind that owing to the system of telegraph lines in the Island being arranged to a great extent in circuits, an interruption on the lines does not as a rule involve interruption of telegraphic communication between the Stations using the line, as an alternate line of communication is, in most cases, at hand by using the other side of the circuit.

The amount voted for maintenance was £1,771 and the expenditure £1,657 9s 10s.

65. During the year a new double wire line of Telegraph, $6\frac{3}{4}$ miles in length, was constructed between Green Island and Glasgow in Hanover. Sawn hardwood was used for the poles. The cost per mile for construction was £32 15s.

LIGHT HOUSES.

66. The three Light Houses at Plumb Point, Morant Point, and Folly Point have been maintained with regularity and efficiency throughout the year; no complaint of any kind having been received with regard to any of them. At each of the establishments the apparatus is of the dioptric kind of English make, with a central lamp burning heavy mineral oil of a flashing point of 250 degrees Fahrenheit, specially manufactured for Light House work. The apparatus at Plumb Point and Morant Point is of the 3rd order, that at Folly Point, Port Antonio, of the 4th order. It may be mentioned as shewing the economy of the new apparatus and oil over the original apparatus using multiple lamps burning cocoanut oil, that when the change was made at Plumb Point it resulted in giving a light of about six times the intensity of the former light for an expenditure on oil of about one quarter of the former cost. The consumption of oil used at each of the Light Houses, and the number of chimneys used during the year are shewn on the sub-joined Statement:—

Light House.		Order of Apparatus.	Number of Wicks to Lamp.	Consumption of Oil in Gallons per annum.			Consumption per Hour.	Breakage of Chimneys.
				G	Q.	P.		
Plumb Point	...	3rd.	4	862	3	1	1.53	80
Morant Point	...	3rd.	4	785	3	1	1.44	34
Folly Point	...	4th.	3	299	2	1	0.50	26

All the Light House towers have been painted and necessary repairs have been done to the Keepers' buildings, stores, &c.

67. A new Light House, and buildings in connection with it, were designed for Negril Point—the extreme west end of the Island—and a site was purchased and a road made to it, but no work has been commenced on the structures in consequence of some suggested alterations in the design having been made by the Trinity House.

PORTLAND, ST. THOMAS AND ST. MARY BRIDGES.

68. The work on the Portland, St. Thomas and St. Mary Bridges (11) under Laws 7 of 1881 and 33 of 1887, was completed during the year, and last and greatest of them, the Rio Grande Bridge, having been formally opened by His Excellency the Governor on the 26th of May, 1892. The bridge is a structure of six spans of wrought iron plate girders, each of 76 feet clear waterway, resting on piers and abutments of cement concrete. The iron piers are sunk in caissons to various depths in the river bed; the greatest depth attained was 32 feet below water level, on the easternmost pier which is founded on the chalk rock forming the bank of the river. Heavy embankments and deep cuttings were involved in the approaches to the bridge, and a new road of about 42 chains length was made to lead to it on the Port Antonio side. The total saving in distance effected by the new road and bridge is 67 chains.

69. With the completion of this bridge the road from Kingston to Port Antonio is now in all weather uninterrupted by floods, the only possible source of interruption being landslips on the Annotto Bay Junction road.

70. The total cost of construction of the bridges and approach roads, built under the Portland and St. Thomas Bridges Loan Law, has been £68,345 13s. 2d., but that sum will be reduced by about £3,000 by the disposal of the plant and surplus materials still on hand.

ST. THOMAS INTERIOR MAIN ROAD (UNDER LAW 1 OF 1891.)

71. Another work of magnitude and importance is the commencement of construction of the Interior Main Road and Bridges in St. Thomas, intended to constitute an alternative line of communication between Kingston and Morant Bay, to that furnished by the coast road. The expenditure on this work during the year was £9,135 8s. 6d.

The construction of this road, which may be considered an offspring of the St. Thomas and Portland Bridges, was commenced during the financial year.

72. It was originally intended to bridge the Yallahs and Johnson Rivers on the line of the coast road, but a detailed study of the river courses shewed the very great difficulty in confining the floods of the rivers to any certain channel, and the risks involved in building bridges which might at any time be left high and dry in the river bed. It was in consequence decided to bridge the rivers at points higher up in their courses, where the channels were better defined and more stable, and where the bridges would be of less size than would be required lower down, and to devote the balance of the money to constructing a road in the interior of the parish of St. Thomas, thus giving an alternative route from Kingston to Morant Bay. The new road diverges from the Windward road at "Eleven Mile," and rejoins it at Morant Bay, will be about 31½ miles in length, and be provided with 8 bridges.

73. Careful and complete investigation and surveys shewed that the best and most generally useful route could be obtained by striking northerly from Cambridge Hill, and crossing the Yallahs at Ramble, then following the right bank of the river and up the Negro and Banana Rivers, crossing the latter at a point far up its course, and then after passing the Monklands Gap, reaching the Blue Mountain Valley Gap road high up in the interior of the parish at Cedar Valley. From this point the route would—with some deviation—follow the Blue Mountain Valley road, crossing the Negro River at Scott's Rock, opposite Coley Estate, and the Johnson River at Serge Island, near Seaforth, and thence down the left bank to Morant Bay.

74. This route having been decided on, work on the new portion of the road from the Yallahs Bridge at Ramble to Cedar Valley commenced in January 1893, and has been carried on with vigour ever since.

75. A 4ft. bridle track was first constructed, and this was widened out subsequently to a 16 ft. driving road. In addition to this stretch of entirely new road, 8½ miles in length, extensive deviations at Llandewey were undertaken to improve the gradients of the road between Cambridge Hill and Ramble; work was undertaken on four deviations of the Blue Mountain Valley road with a view of keeping the road entirely on the right bank of the Negro River, and the work on the portions of new road between Serge Island and Morant Bay, which had been commenced in the previous year, were continued and completed. Work was also undertaken on the bridges over the Negro River and Johnson River, the masonry of which was finished, and which would have been entirely completed within the year but for delay in sending out the Iron and Steel work of the bridges from England. Work was also undertaken on the Bridge over the Yallahs at Ramble, on the Allen Spring Bridge on the Llandewey deviation, and considerable work was done in the erection of a new driving bridge over the Yallahs at Easington.

76. The bridges over the Johnson and Negro Rivers have, since the end of the financial year, been completed, and have been thrown open to traffic. They are each of 120 feet span, with main girders of a type—now generally considered as American in design—very different in appearance, and, perhaps, not so pleasing to the eye as other bridges, either of the open or solid webbed design, hitherto adopted in the Island, although more economical in cost. The bridges over the Yallahs at Ramble and Easington will be of the same general design; the former 80 feet and the latter 150 feet in span.

77. It is proposed to extend the interior Main Road from the Johnson River at Serge Island direct to Bath, by way of the Plantain Garden River Valley, a distance of about 10½ miles. Such a road would, without question, be a valuable addition to the means of communication in the parish, and would open up a very fertile district.

BRIDGES CONSTRUCTED UNDER LAW 20 OF 1892.

78. In connection with this Law, surveys have been made in all the parishes, with the exception of St. Elizabeth, and plans prepared for the erection of many of the 89 Bridges mentioned in the Schedule attached to the Law, but up to the end of the financial year only £2,603 6s. 6d. had been expended.

79. The only bridge completed in the year was a concrete arch bridge of 25 feet span, built across the White River at Trinity Ville, in St. Thomas, but work was started on the following bridges:—

Rio Sambre Bridge on the Pear Tree Grove Road, St. Mary.

Oracabessa and Rio Novo Bridges, on the Road from Port Maria to Ocho Rios.

Tryall Bridge on the road from Fontabelle to Trinity near Port Maria.

Bridge over the Rio D'Oro on the road from Bog Walk to Harkers Hall in St. Catherine.

Bridge over the Plantain Garden River at Hordley in St. Thomas.

Banana River Bridge in Portland.

Bridge at Canewood in Portland.

Boggy Gut Bridge on the Adelphi road, St. James.

Complete plans were got out for the bridges to be built in lower Clarendon; one over the Rio Minho, span 250 feet, and one over the Milk River, span 100 feet, and the steel and cast iron work required for them was ordered from England in September last.

PAROCHIAL SERVICES.

80. The principal services carried out or continued by the Department for Parochial Boards were, the Montego Bay Water Works; the reconstruction and drainage of Great George Street in Savanna-la-Mar; and the construction of the road from Troy to Oxford, part of the through line from Barnstaple, in Trelawny, to Green Hill, in Manchester, and Lilliput in St. Elizabeth.

81. The Montego Bay Water Works were commenced in June 1892, the principal part of the work being done by Contractors, and the rest by the Officers of this Department. The Works, which are not yet completed, will consist of two Intakes and a Reservoir at Retirement about $4\frac{1}{2}$ miles from Montego Bay, with a line of 7 inch Cast Iron Main to the town, and distributing pipes and house to house services and fittings inside the town. The water for the supply is taken from the Bellvue and Charlemont Springs above Retirement Estate. At the termination of the financial year most of the work on the Reservoir, Intakes and Mains was complete, and the fittings for the domestic supply of the town had recently arrived. The supply to the town will probably commence at an early date. The total expenditure on the works to the end of the financial year was £6,179 17s. 7d.

82. The construction of the driving road through the Manchester Cockpit country from Troy to Oxford has been continued. The old dangerous line of bridle track has been generally followed, but at the crossing of the One Eye River at Oxford a deviation of about $\frac{3}{4}$ of a mile in length has been adopted, which will very much improve the gradients on the road, and avoid the dangerous turnings on the existing line. The new road will pass within a few yards of the mouth of the Great Oxford Cave, which runs for about $\frac{3}{4}$ of a mile in the white limestone formation. The Cave is about 3 miles from Balaclava Station, and, with the country in its locality, will form an object of interest to sight-seers.

83. The reconstruction and improvement of Great George Street, the principal Street in Savanna-la-Mar, has been completed. Concrete side drains and kerbs have been provided; the footpaths have been gravelled, and the surface of the street properly levelled and metalled. The work thus effected makes a great sanitary improvement to the town, and adds very much to its appearance. Great George Street is now undoubtedly the first street in the Island. It would be still further improved by the judicious planting of an avenue of shade trees throughout its entire length.

84. Plans, Specification and Estimates were prepared for the Clarendon Parochial Board for the May Pen Water Supply, and the St. Catherine's Parochial Board were advised respecting the Water Works for Linstead, and the work of extending the mains at Old Harbour was completed.

SURVEYS.

85. During the year under review, in addition to the many small surveys made by officers in charge of works for location of bridges and deviations of roads, special surveys, involving very considerable research and trouble, have been made for extensive deviations of roads. In St. Thomas, the survey for the new portion of the interior Main Road, and for the Llandewy and other deviations were completed, and the Surveyor then undertook the tracing out of a line to connect Ulster Spring, in Trelawny, with Christiana, in Manchester, by way of Low River and Coleyville. The length of new road involved will be about 12 miles. The country to be traversed is, in some parts, very much cut up and broken, and considerable judgment was necessary in locating the line. The surveys were not complete at the end of the financial year, but have been nearly completed since with the result that a line with very good gradients has been projected.

86. In St. Elizabeth, surveys were made for a diversion of the road at Ipswich to avoid the low portions of the road at "Herring Hole," which are submerged to a depth of about 4 feet on the occasion of heavy weather at the sources of the Y S. River. After considerable searching a good line was found with a fairly uniform incline and with gentle gradients, which were very severe in some places on the length of road to be abandoned.

87. In Manchester, surveys have been made between Christiana and Barracks, and the "Devil's Bridge" at the boundary of Trelawny and Manchester, with a view to the construction of a road to cut out the steep gradients, and the unnecessary rises and falls of the road between those points. The surveys shew that good gradients can be obtained, and thus, when the road is made, there will be a thoroughly good line of communication between South-eastern Trelawny and the Kendal Station by way of Ulster Spring, Barracks and Shooter's Hill.

88. In Clarendon and St. Ann, surveys have been completed for a deviation of the road known as the Baillieston Road from Woodhall, in the former parish, to Borobridge in the latter. The existing road

which is only a widened out bridle track, follows at almost impossible gradients the watershed between the sources of the Cave River and the Rodens or White Rock River, a chief tributary of the Rio Minho. The bridle road was constructed in 1883, at a time when the district was almost unsettled, and in standing forest. Since that time it has developed with amazing rapidity owing to the fertility of the soils; and the construction of the railway along the Mile Gully Valley and the Railway Station at Kendal put this road in the position of the main line of communication between Southern St. Ann and the railway. On this account a good line has become a necessity. It is satisfactory to know that such a line has been found, avoiding all the steep gradients of the old one, and the incessant and dangerous crossing of the Cave River. The new road will be about $5\frac{1}{2}$ miles in length, a few chains shorter than the existing one.

89. In the valley of the Rio Minho, in Clarendon, surveys have been made for the deviation of the Frankfield road with a view to avoiding the numerous (17) fords of the river. These are not yet complete. This road will be eventually continued by way of Logie Green to meet the Baillieston Road, and thus connect with Shooter's Hill, Cave Valley and Barracks, forming an interior network of roads which will be found of the greatest use in the development of the resources of this very fertile district, and in the facilitating of travel between portions of the Island which are now far distant from one another.

RIO COBRE IRRIGATION WORKS.

90. These works were maintained and efficiently worked during the year 1892-93 at a cost of £1,177 17s. 5d., which sum includes salaries and all working expenses, and an additional sum of £161 16s. 6d. was expended in extending the subsidiary channels and on other new works, making the total expenditure for the year £1,339 13s. 11d. The Revenue earned was £3,423 5s. 0d. and the amount collected in the year £3,304 16s. 10 $\frac{1}{2}$ d. The earnings are made up as follows:—

Water for the Spanish Town Water Works	...	£ 150	0s. 0d.
“ “ Sugar Estates	...	1,000	0 0
“ “ Irrigating Grass and for Watering Stock	...	1,849	12 11
“ “ Banana Cultivation	...	157	18 4
Irrigation Rates on Land under Law 39 of 1889	...	138	1 10
Do. do. On Houses	do.	80	12 6
Rent of Fruit Trees and Canal Lands	...	43	18 8
Sales of Logwood Roots, Annatto, &c.	...	3	0 9
Total	...	£3,423	5 0

91. The earnings for the six years which ended September 30th, 1889, only averaged £2,250 a year, being £1,173 less than last year. This increase is due to Law 39 of 1889, which imposes a small Irrigation Rate on all lands within the area controlled by the Canals. The rate is taken as a payment on account of water supplied to such landholders as buy water, and many of those who previous to the passing of the Law referred to did not buy water, now prefer to do so rather than to pay the Irrigation Rate; in that way the Revenue is increased and a knowledge of the value of irrigation, when properly applied, is spreading.

92. During the past two years, Mr. T. H. Sharpe has been growing bananas under irrigation at Rodens and Reid's pens., with, I understand, very satisfactory results; the fruit grown being equal to the finest ever exported from the island. Mr. Sharpe is so well satisfied with the result of his experiment that he has, in company with several others, taken steps to extend the area in bananas, and I hope that his example may be followed generally.

93. In suitable soil with efficient management, and with irrigation, I believe banana growing would be found most profitable, and there are thousands of acres of suitable land within reach of the Canals at present put to little use: but the land would have to be carefully chosen, as some of it is quite unsuited to such a crop.

94. This is not the first time banana cultivation has been tried on the plains of Saint Catherine. In my report for 1883, ten years ago, I wrote:—

“The banana cultivation is not prospering, and there are signs that it will die out. For some time past the demand for bananas has not been equal to the supply, but it seems to me that the reason is that the supply is limited, and that shippers prefer to purchase where fruit can be got in sufficient quantity to fill their vessels.” And that it did die out was, I believe, owing to the cultivation not having been taken up on a sufficiently large scale.

95. Mr. Sharpe's example might be followed with great profit by the holders of suitable land, and, if it were, the revenue from the Works would be doubled in the course of the next few years, without appreciably increasing the cost of carrying on the works. At present not a third of the water available is used. No place could be better suited than the neighbourhood of Spanish Town for the establishment of an experimental farm; for water, stable manure and Prison labour are there abundant. Such a farm, where, among other things, vegetables and ground provisions could be grown for the Public Institutions, would be a benefit to the community in general, and should be self-supporting. I understand that the present Superintendent of the District Prison was for some years in charge of a farm worked by convicts at Woking in England.

SPANISH TOWN WATER WORKS.

96. The Spanish Town Water Works have been kept in good order throughout the year. The gross Revenue was £1,083 9s. 5d., and the cost of working and maintenance £432 13s. 1d.

97. The total loan for the Works, which were completed in 1881, amounted to £8,696, but has since been reduced by current revenue to 2,457 2s. 9d. The rates are at present lower than those paid in any other town in the Island, but in a few years, when the entire cost of the Works will be paid off, they may be very considerably reduced.

The advisableness of providing Filter Beds is now under consideration. They would cost about £1,750, and add, without interest, £75 per annum to the working charges.

GENERAL.

98. The Public Works Stores Department, situated in East Street, Kingston, has worked satisfactorily during the year. The value of the Stores issued was £11,717 12s. 4d. The Wharf and Store Buildings are in good order.

99. The Live and Dead Stock of the Department in charge of the Superintendents of the various parishes, was valued on the 31st March last at £19,970 5s. 3d.

100. Table VI shows, in a summarised form, the number and value of the Live Stock, and the value of the Dead Stock, Instruments and Furniture, in each parish.

101. The Superintendents of the respective parishes report once a month, the number and condition of their Live Stock; and are also required to send in a complete monthly Return of the Dead Stock, Instruments and Furniture in their charge.

Each return is carefully compared with its predecessor and all decreases have to be fully explained, while the increases are recorded independently in the Head Office from the certified accounts sent up for payment.

By this system it is impossible for any article, once paid for, to be lost sight of, while at each transfer stock is actually "taken" by the outgoing and incoming officers, the outgoing officer being liable to make good at his own expense the value of all articles not produced by him.

102. Increasing difficulty has been experienced of late years in obtaining regular hired cartage at reasonable rates, particularly in the banana parishes, where sometimes carts could not be hired at all for road work.

This gradually led to the Department's purchasing and working its own Mules and Carts throughout the island, and the saving and convenience have proved to be considerable.

On the 31st March last the Department owned 540 mules valued at £8,264, and 231 carts valued at £1,612, and the net estimated saving for the year (after deducting 25 per cent. for depreciation in value of stock, &c.) was £3,941 12s. 1d. See Table VII.

In order to insure that the system is not resulting in loss, each officer working Government stock must submit each month a Profit and Loss account, showing, on one side, the cartage done—priced at the rate paid for hired carts in his particular parish—and, on the other side, the cartage expenses—*e. g.* cartman's wages shoeing, corn, pasturage, taxes, repairs and renewals.

In addition to the monetary saving the carts are available when and where wanted, while the cartmen are directly under the control of the Department—two considerable advantages.

103. The Rainfall Report for March, 1893, shows that out of the total number of 177 gauges, 48 (or over 1 in 4) are kept by officers of this Department.

The information thus obtained is not merely of meteorological service, but it is an important factor in checking the cost of maintaining each road, and in estimating the extent of the damage likely to be caused by heavy or long continued rain.

Each day's rainfall is measured and recorded at the Public Works Offices and Lighthouses all over the Island.

CHANGES IN THE DEPARTMENT.

103. On April 1st, 1892, Mr. S. T. Scharschmidt, District Engineer, was transferred from the Southern to the Central District in the place of Mr. J. H. Dodd, who, after 21 years service, retired in November 1891, on account of ill health, induced by devotion to duty for many years in the wettest district in the Island.

104. In February 1893 the Department lost another experienced officer in Mr. T. Gayleard, Superintendent of Public Works, who, having served 20 years, had to relinquish his appointment in consequence of bad health.

105. Mr. J. D'Aeth took up Mr. Scharschmidt's duties in the Southern district, and Mr. D. Sanftleben, who had been in charge of the bridge and other works in Portland, succeeded Mr. D'Aeth as Engineer of the Eastern district.

106. Mr. C. Renwick, Engineer of the Western district, was absent from the Colony on leave for 9½ months, from June 1st, 1892, and during his absence his duties were performed by Mr. George Mould.

107. In conclusion, I think it my duty to place on record my appreciation of the way in which the Officers of this Department have worked during the past two years. Those in immediate charge of roads and works have, with few exceptions, shown the greatest interest in the discharge of their duties, and have often had to work early and far into the night to keep their work up to date and to ensure the regular and prompt payment of the labourers employed.

108. I do not think that the general public have any conception of the hard work done by the Superintendents, their Assistants and Clerks, nor of the arduous and anxious nature of the work which has frequently to be done by all outdoor Officers of the Public Works Department.

I have, &c.,

JAS. RICHMOND, Acting Director of Public Works.

TABLE I.—*Total Expenditure incurred by the Public Works Department in the Financial Year ending March 31st, 1893.*
(For full details see Blue Book Return.)

Part.	Service.	Amount Voted.	Amount Spent.	Saving.	Excess.	Remarks.
	SALARIES.					
	Salaries ...	£ s. d. 15,622 0 0	£ s. d. 15,263 12 3	£ s. d. 358 7 9	£ s. d. ...	Savings: Engineers £241, and Superintendents and Assistant Superintendents £219. Excess: Assistant Draftsman £102.
	Allowances for travelling ...	1,925 0 0	1,965 16 3	...	40 16 3	Grant insufficient.
	Services, Postage, Stationery and Printing ...	{ *600 0 0 } 600 0 0	1,122 1 5	77 18 7	...	
I.	ROADS—MAINTENANCE.					
	Eastern District—(St. Andrew, St. Thomas, Portland and St. Mary east of the Wag Water)	9,228 0 0	9,455 18 9	...	227 18 9	Excess due to Flood damage on Junction Road.
	Central District—(St. Mary west of the Wag Water, St. Ann, and St. Catherine)	{ *700 0 0 } 9,287 0 0	10,939 8 3	...	952 8 3	{ Excess due to work on Outram River Bridge (£643 8s. 10d.), and balance to Flood damage.
	Western District—(Trelawny, St. James, Hanover and Westmoreland)	7,158 10 0	6,679 10 0	479 0 0	...	£515 9s. 10d., saved on Barbican Bridge. Some of the grants for Road Maintenance were exceeded.
	Southern District—(St. Elizabeth, Manchester and Clarendon)	6,830 0 0	6,842 5 2	...	12 5 2	
II.	ROADS—NEW WORKS ON	4,884 10 0	4,290 7 5	594 2 7	...	General savings on the Grants. All the works authorized were executed excepting a wall in St. Catherine found not to be required and for which £100 was voted.
III.	BUILDINGS—MAINTENANCE.					
	Churches, Chapels, and Rectories ...	510 0 0	520 15 6	...	10 15 6	Excess on Grant for Casual Repairs.
	Courts and Public Offices ...	{ *126 0 0 } 1,708 0 0	1,502 15 1	331 4 11	...	{ Work postponed £74. Saving on grant for Casual Repairs £242 and balance on items generally.
	Prisons, Reformatories and Police Stations ...	2,131 0 0	1,784 10 4	346 9 8	...	Works found not to be necessary £45. Saved £155 on Grant for Casual Repairs, and balance on other items.
	Hospitals and Asylums ...	{ *54 0 0 } 2,771 0 0	2,449 9 5	375 10 7	...	{ Unexpended on Grant for Casual Repairs £245, and general savings on Works executed £130.

*Amounts specially authorized by the Governor during the year.

TABLE I—*Total Expenditure incurred by the Public Works Department in the Financial Year ending March 31st, 1893, contd.*

(For full details see Blue Book Return.)

Part.	Service.	Amount Voted.	Amount Spent.	Saving.	Excess.	Remarks.
III., <i>contd.</i>	BUILDINGS—MAINTENANCE, <i>contd.</i>	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
	Miscellaneous ...	{ *63 9 0 2,241 0 0 }	1,907 10 4	396 18 8	...	{ All the Works authorized were executed. £100 was saved on the grant for Casual Repairs, and balance on Services generally.
	Rents and Taxes ...	3,221 12 0	2,430 8 2	791 3 10	...	{ £2,500 allowed for Taxes and Rates on Public Buildings, but only £1,817 paid.
IV.	BUILDINGS—NEW WORKS.					
	Courts and Public Offices ...	{ *1,832 5 2 5,406 0 0 }	6,887 10 2	350 15 0	...	{ £120 saved on Santa Cruz Court House, and small savings on other items amount to £230.
	Prisons, Reformatories and Police Stations ...	{ *223 10 0 3,417 0 0 }	1,984 17 3	1,655 12 9	...	{ Savings due to work not carried out : Police Station Siloah £700. General Penitentiary £640. Tank for Police Station Newmarket £50, and Lunatic Cells, St. Ann's Bay £50. A saving of £100 on the Police Station at Kendal, and balance on other works carried out.
	Hospitals and Asylums ...	{ *60 8 0 2,462 0 0 }	1,970 10 3	551 17 9	...	{ Work postponed : Isolation Ward Kingston Hospital £200, and Shed at Montego Bay Hospital £70. 226 was unexpended on the grant for the Lunatic Asylum, and general savings on other items £55.
	Miscellaneous Buildings ...	{ *2,071 13 9 1,503 0 0 }	2,798 19 10	775 13 11	...	{ £600 allowed for a residence for the Director of Public Gardens at Hope was not expended. Saved on grants for : Gates Parade Gardens £23, Tanks for King's House £18, Inspector's Residence Clarendon £24, and generally £110.
	LIGHT HOUSES.					
	Plumb Point Maintenance ...	567 0 0	501 11 6	65 8 6	...	Savings : Salaries £10. Oil and Supplies £47, and Repairs £8.
	Morant Point do. ...	566 4 0	527 10 10	38 13 2	...	Savings : Oil, &c. £30, and Repairs £18. Excess on Salaries £10.
	Folly Point do. ...	276 0 0	263 3 2	12 16 10	...	Saved £7 on Salaries, and £6 on grant for Oil and Supplies.
	TELEGRAPHS.					
	Maintenance ...	1,771 0 0	1,657 9 10	113 10 2	...	
	Extensions ...	236 5 0	221 3 8	15 1 4	...	Savings required to complete work in 1893-94.

*Amounts specially authorized by the Governor during the year.

TABLE 1.—*Total Expenditure incurred by the Public Works Department in the Financial Year ending March 31st, 1893, contd.*
(For full details see Blue Book Return.)

Part.	Service.	Amount Voted.	Amount Spent.	Saving.	Excess.	Remarks.
IV., contd	GENERAL.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
	Furniture for Courts, Public Works Department and Parochial Authorities	{ *134 17 0 810 16 0 }	845 9 1	100 3 11	...	Expenditure for Public Works Department £241 9s. 11d., King's House £6, Judicial £388 4s. 4d. and Parochial Boards £209 14s. 10d.
	Rio Cobre Irrigation Canals	1,498 10 0	1,339 13 11	158 16 1	...	Savings: Office expenses £34, Stores £40, Subsidiary Channels £20, and on Contingencies £85. Excess of £20 on Maintenance of Works.
	Spanish Town Water Works—Maintenance	483 14 0	432 13 1	51 0 11	...	Savings: Salaries £11, Maintenance of Works £30, and on Contingencies £10.
		92,981 3 11	86,585 0 11	7,640 6 11	1,244 3 11	Net saving on sums authorized to be expended £6,396 3s. 0d.
	Old Harbour Water Works—New Work	...	13 4 2	...	...	To complete extensions of Mains to Old Harbour Bay and to Church Pen.
	Montego Bay do. do.	...	6,179 17 7	...	...	Work done for Parochial Board of St. James.
	Negril Point Light House Construction	...	428 15 7	...	...	£105 for surveys and Lands, £262 construction of road, and balance for clearing land, plans, &c.
	LAW 17 OF 1890—PAROCHIAL MAIN ROADS. Maintenance	...	15,838 1 10	...	...	£2,878 7s. 0d. to be added for salaries. Only the roads completed are charged cost of maintenance.
	Reconstruction	...	46,637 10 6	...	...	Chargeable to Loan raised under Law 17 of 1890.
	BRIDGES—PORTLAND, &c. Bridges in St. Mary, Portland and St. Thomas	...	467 10 6	...	...	Chargeable to Loans under Laws 7 of 1881 and 33 of 1887.
	Interior Road and Bridges, St. Thomas	...	9,135 8 6	...	...	Do. do. Law 1 of 1891.
	PAROCHIAL SERVICES. Road from Barnstable in Trelawny via Oxford to Lilliput in St. Elizabeth and Green Hill in Manchester	...	2,737 7 1	...	...	Charged to Parochial Road Reserved Fund.
	Streets and Drainage Works of Savanna-la-Mar	...	195 19 1	...	...	Do. do.
	Dundee Spring Bridge, St. Andrew	...	32 13 5	...	...	Do. do.
	BRIDGES UNDER LAW 20 OF 1892	...	2,603 6 6	...	...	Chargeable to Loan to be raised under Law 20 of 1892.
	Total Expenditure	...	£170,854 15 8	...	...

*Amounts specially authorized by the Governor during the year, amounting in all to £5,866 2s. 11d.

TABLE II.—*Maintenance and Repair of Main Roads and Bridges (Part I. Annual Estimates 1892-93.) Expenditure in the Financial Year 1892-1893.*

Parish.	Mileage. M. C.	Ordinary Maintenance.		Special Works charged to Maintenance.		Total Cost of Maintenance and of Special Works charged thereto.	
		Total Cost	Average Cost per Mile.	Total Cost.	Average Cost per Mile.	Amount for each Parish.	Average Cost per Mile.
<i>Eastern District—</i>		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Kingston and St. Andrew } ...	46.46	2,395 13 1	51 8 9	192 0 10	4 2 5	2,587 13 11	55 11 2
St. Thomas } ...	53.75	1,817 13 8	33 14 0	190 5 1	3 10 6	2,007 18 9	37 4 6
*Portland (and St. Mary East of the Wag Water } ...	76. 5	3,411 10 8	44 17 0	1,448 15 5	19 0 11	4,860 6 1	63 17 11
<i>Central District—</i>							
*St. Mary (West of the Wag Water } ...	58.56	3,154 4 9	53 14 8	1,383 15 10	23 11 6	4,538 0 7	77 6 2
St. Ann } ...	110.59	2,971 6 0	26 16 8	110 15 7	1 0 0	3,082 1 7	27 16 8
St. Catherine } ...	77.25	3,094 6 10	40 0 6	224 19 3	2 18 2	3,319 6 1	42 18 8
<i>Western District—</i>							
Trelawney } ...	61.19	1,578 3 3	25 15 5	131 1 10	2 2 10	1,709 5 1	27 18 3
St. James } ...	41.39	1,090 15 6	26 5 10	...	...	1,090 15 6	26 5 10
Hanover } ...	49. 3	1,442 17 7	29 8 5	538 1 9	10 19 6	1,980 19 4	40 7 11
Westmoreland } ...	58.43	1,755 0 5	29 19 7	143 9 8	2 9 0	1,898 10 1	32 8 7
<i>Southern District—</i>							
St. Elizabeth } ...	63.33	1,936 5 6	30 10 8	227 0 2	3 11 7	2,163 5 8	34 2 3
Manchester } ...	59. 5	1,559 17 1	26 8 3	...	...	1,559 17 1	26 8 3
Clarendon } ...	83.70	2,847 0 6	33 18 0	272 1 11	3 5 9	3,119 2 5	37 3 9
Totals for the whole Island } ...	839.78	29,054 14 10	34 11 10	4,862 7 4	5 15 9	33,917 2 2	40 7 7

* It has been found more convenient and economical for the Superintendent, Portland, to work all the roads in St. Mary, East of the Wag Water. Taking the roads in the two Parishes as geographically distributed, the figures would be as below :—

Parish.	Mileage. M. C.	Ordinary Maintenance.		Special Works charged to Maintenance.		Total Cost of Maintenance and of Special Works charged thereto.	
		Total Cost.	Average Cost per mile.	Total Cost.	Average Cost per mile.	Amount for each Parish.	Average Cost per mile.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Portland } ...	56.60	2,226 10 2½	39 4 8	824 9 2	14 10 6½	3,050 19 4½	53 15 2½
St. Mary } ...	78. 1	4,339 5 2½	55 12 5½	2,008 2 1	25 14 9½	6,347 7 3½	81 7 3½

TABLE III.—*Statement shewing for each Parish the total length of Parochial Roads taken over under Law 17 of 1890, the amounts expended on Reconstruction and on Maintenance, and the sums Collected since the Law came into operation to March 31st 1893.*

Parish.	Mileage. M. Chs.	Expenditure.			Total Collections
		Reconstruction.	Maintenance.	Total.	Taxes appropriated under Law 17 of 1890.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.
St. Andrew } ...	64 33	9,306 15 8	1,944 9 0	11,251 4 8	5,706 13 5
St. Thomas } ...	63 7	10,160 13 10	2,206 2 4	12,366 16 2	6,246 4 10
Portland } ...	52 20	13,514 11 7	1,652 7 3	15,166 18 10	5,995 18 10
St. Mary } ...	81 70	17,160 11 7	1,902 7 0	19,062 18 7	8,353 8 2
St. Ann } ...	95 60	12,576 14 6	2,072 6 0	14,649 0 6	8,636 0 7
Trelawny } ...	41 66	6,058 12 3	779 15 10	6,838 8 1	4,032 12 9
St. James } ...	48 28	6,766 9 3	1,202 8 0	7,968 17 3	4,557 18 0
Hanover } ...	36 70	5,785 9 3	898 1 3	6,683 10 6	4,230 15 0
Westmoreland } ...	72 33	12,330 0 6	1,794 10 3	14,124 10 9	7,812 19 3
St. Elizabeth } ...	110 66	18,947 16 10	2,417 11 9	21,365 8 7	9,814 5 11
Manchester } ...	84 61	12,317 3 0	1,976 5 2	14,293 8 2	8,500 14 10
Clarendon } ...	85 78	14,648 2 11	1,983 16 8	16,631 19 7	9,046 8 0
St. Catherine } ...	116 52	18,470 17 6	2,309 8 10	20,780 6 4	10,878 4 0
Totals } ...	955 4	158,043 18 8	23,139 9 4	181,183 8 0	93,812 3 7

NOTE—Charges for Interest and Sinking Fund on Moneys raised by the Loan authorized under Law 17 of 1890, are not included in the expenditure given above.

PUBLIC WORKS DEPARTMENT.

TABLE IV.—*Shewing the Total Cost and distribution of Road Maintenance (including the Maintenance of the Parochial Roads taken over under Law 17 of 1890) for the Financial Year ending 31st March, 1893.*

[illegible]

TABLE V.—Statement shewing the cost of maintaining the Telegraph Lines, for the Financial Year ending 31st March, 1893.

Parish.	Length in Miles.	Amount Granted.	Expenditure.		Excess.	Saving.	No. of Inter- ruptions reported.
			Amount.	Per Mile.			
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Kingston and St. Andrew	50½	126 0 0	116 17 3	2 6 6	...	9 2 9	34
St. Thomas	58½	221 0 0	223 16 10	3 16 6½	2 16 10	...	37
Portland (and St. Mary East of the Wag Water)	69½	248 0 0	239 15 9	3 9 3	...	8 4 3	120
St. Mary (West of the Wag Water)	44	110 0 0	94 12 11	2 3 0½	...	15 7 1	...
St. Ann	84	210 0 0	185 10 3	2 4 2	...	24 9 9	31
St. Catherine	18	45 0 0	14 19 9	0 16 7¾	...	30 0 3	...
Trelawny	37	105 0 0	97 13 1	2 12 9½	...	7 6 11	23
St. James	32	92 10 0	90 1 9	2 16 3½	...	2 8 3	35
Hanover	31	90 0 0	88 11 6	2 17 1¾	...	1 8 6	11
Westmoreland	33	95 0 0	95 1 3	2 17 7½	0 1 3	...	8
St. Elizabeth	44	110 0 0	141 7 4	3 4 3	31 7 4	...	5
Manchester	53	132 10 0	131 14 11	2 9 8½	...	0 15 1	6
Clarendon	44	110 0 0	99 7 3	2 5 2	...	10 12 9	25
	598	1,695 0 0	1,619 9 10	2 14 2	34 5 5	109 15 7	335
Government Telegraph Lines along the Railway	64	76 0 0	38 0 0	...	...	*38 0 0	...
Total	662	1,771 0 0	1,657 9 10	...	34 5 5	147 15 7	335

* Saving due to the Account for the last six months Maintenance not being rendered and paid before the close of the financial year.

TABLE VI.—Shewing the value of the Live and Dead Stock of the Public Works' Department in charge of the Superintendents of the various Parishes on the 31st March, 1893.

Parish.	Live Stock.		Carts, Tools, Materials and Plant.	Instruments and Furni- ture.	Total for each Parish.
	Number.	Value.			
		£ s. d.	£ s. d.	£ s. d.	£ s. d.
Kingston and St Andrew	43	610 0 0	609 14 6¾	68 7 0	†1,288 1 6¾
Plumb Point Light House	...	...	69 18 0	0 3 0	70 1 0
St. Thomas	51	765 0 0	1,430 17 3¾	*80 6 1	2,276 3 4½
Morant Point Light House	3	60 0 0	29 4 2	1 5 0	90 9 2
Interior Main Road	...	...	189 19 4	18 19 6	208 18 10
Portland	63	945 0 0	1,810 19 4	81 8 9	2,837 8 1
Folly Point Light House	1	15 0 0	81 11 3	8 8 0	104 19 3
Totals for Eastern District	161	2,395 0 0	4,222 3 11	258 17 4	6,876 1 3
St. Mary	72	1,128 0 10	978 1 5	75 0 0	2,181 2 3
St. Ann	30	494 0 0	534 12 3½	49 18 3	1,078 10 6½
St. Catherine	71	895 0 0	818 3 4	*80 11 9	1,793 15 1
Totals for Central District	173	2,517 0 10	2,330 17 0½	205 10 0	5,053 7 10½
Trelawny	17	238 0 0	528 8 3	40 10 8	806 18 11
St. James	13	273 0 0	441 14 8	*54 18 6	769 13 2
Hanover	15	207 0 0	462 15 7¾	27 13 9	697 9 4¾
Westmoreland	23	391 0 0	542 7 2½	58 5 0	991 12 2½
Totals for Western District	68	1,109 0 0	1,975 5 9	181 7 11	3,265 13 8
St. Elizabeth	38	746 0 0	638 12 3	24 19 6	1,409 11 9
Manchester	29	476 0 0	646 5 2¾	53 7 1	1,175 12 3¾
District Engineer's Office	...	...	...	53 17 3	53 17 3
Clarendon	67	934 0 0	693 0 9	36 11 6	1,663 12 3
Totals for Southern District	134	2,153 0 0	1,977 18 2¾	168 15 4	4,302 13 6¾
Spanish Town Water Works	...	...	327 8 1	...	327 8 1
Rio Cobre Irrigation Works	4	69 12 0	55 4 10	20 4 0	145 0 10
Total	4	69 12 0	382 12 11	20 4 0	472 8 11
Totals for all the Parishes	540	8,246 12 10	10,888 17 10	834 14 7	19,970 5 3

* Includes the Instruments and Furniture of the District Engineer's Office. † These figures are exclusive of the value of:
(a) The Instruments and Furniture in the Head Office. (b) The Stores and Furniture in charge of the Superintendent of the Public Works Stores, East Street, Kingston. (c) The Machinery and Bridge plant now at the East Street Wharf.

TABLE VII.—*Particulars of the Working of Livestock belonging to the Public Works' Department in the various Parishes for the Financial Year ending March 31st, 1893.*

Parish.	No. of Live-stock on Hand 31.3.93.	Value of Work done as per Monthly Returns	Working Ex-penses as per Monthly Returns	Value of Work done less Working Ex-penses.	Less 25 per cent. for Depre-ciation in value of Stock, &c.	Approximate net gain to the Department by Working its own Stock.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Kingston and St. Andrew	43	1,129 15 1	814 9 7	315 5 6	78 16 4½	236 9 1½
St. Thomas	54	1,270 1 0½	878 4 10	391 16 2½	97 19 0¾	293 17 1¾
Portland and St. Mary East of the Wag Water	64	2,205 1 8	1,537 14 0	667 7 8	166 16 11	500 10 9
St. Mary, West of the Wag Water	72	1,757 0 9¾	1,014 13 5¼	742 7 4½	185 11 10¼	556 15 6¼
St. Ann	30	691 7 2	434 0 0	257 7 2	64 6 9½	193 0 4½
St. Catherine	71	2,132 17 11¼	1,292 18 10	839 19 1¼	209 19 9¼	629 19 4
Trelawny	17	357 5 0	251 4 3	106 0 9	26 10 2¼	79 10 6¾
St. James	13	408 7 8¾	264 11 5	143 16 3¾	35 19 0¾	107 17 3
Hanover	15	285 0 0	194 0 0	91 0 0	22 15 0	68 5 0
Westmoreland	23	596 7 3	416 4 2	180 3 1	45 0 9¼	135 2 3¾
St. Elizabeth	38	842 4 0	534 9 2	307 14 10	76 18 8½	230 16 1½
Manchester	29	889 0 0	432 8 1½	456 11 10½	114 2 11¾	342 8 10¾
Clarendon	67	1,437 19 7	762 12 6	675 7 1	168 16 9¼	506 10 3¾
Rio Cobre Irrigation Works	4	143 12 0	62 19 6	80 12 6	20 3 1½	60 9 4½
Totals	540	14,145 19 3¼	8,890 9 9¾	5,255 9 5½	1,313 17 4½	3,941 12 1