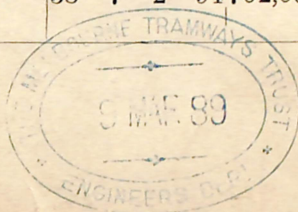


Melbourne Tramways Trust.

STATEMENT showing the different types of construction, together with estimated cost of the Tramway Lines, Branch Lines, and extended Branch Lines, as Scheduled in the Tramway and Omnibus Company's Bills, 1883 and 1884.

No.	Route.	Drawing.	Section.	Mileage.				Cost.			Nature of Construction	Remarks.
				M.	F.	Ch.	Lks.	£	s.	d.		
1	Spencer Street Railway and Fitzroy Line ...	1	A and B	1	0	0	00	23,637	10	0	Cable and Horse	From Spencer Street Terminus to Swanston Street.
1	Spencer Street Railway and Fitzroy Line ...	1	C	2	3	9	30	53,900	0	0	Cable	Remainder of Line, omitting portion in Albert Street.
1A	... ..	...	...	...	...	...	...	...	...	...		Dispensed with.
1B	Collingwood and Clifton Hill Line ...	1	C	2	3	9	21	56,050	0	0	Cable	Total length.
1C	Simpson's Road Branch...	1	C	2	1	0	11	46,000	0	0	Cable	Total length. The portion in Burnley Street dispensed with.
1D	Brunswick Branch ...	1	B	4	1	3	11	95,000	0	0	Cable	Total length.
1B	Hotham Branch...	2	C	2	2	4	26	10,600	0	0	Horse	Total length.
1F	West Melbourne Branch	2	C	1	1	2	83	5,400	0	0	Horse	Total length.
1G	Lonsdale St Branch ...	1	B	0	1	2	00	3,800	0	0	Cable and Horse	From Elizabeth to Swanston Streets.
1G	Lonsdale Street Branch...	2	C	0	2	2	00	1,200	0	0	Horse	From Elizabeth to William Streets.
1H	Nicholson Street Branch	1	C	1	3	0	35	30,000	0	0	Cable	Total length.
2	Hobson's Bay Railway and Carlton Line ...	1	A and B	0	7	5	00	22,837	0	0	Cable and Horse	From Flinders Street Terminus to Victoria Street
2	Hobson's Bay Railway and Carlton Line ...	1	C	2	0	2	94	44,000	0	0	Cable	Remainder of line, omitting portion in Queensberry Street.
2A	Richmond Branch ...	1	A	0	5	6	00	18,100	0	0	Cable and Horse	Swanston Street Terminus to Spring Street.
2A	Richmond Branch ...	1	C	2	0	4	51	44,453	0	0	Cable	Remainder of Line.
2B	Flinders Street Branch...	1	A	0	7	0	85	22,377	0	0	Cable	Total length.
2C	North Carlton Branch ...	1	C	0	5	5	03	15,100	0	0	Cable	Total length.
3	South Yarra and Prahran Line ...	1	C	3	1	2	00	68,100	0	0	Cable	From Flinders-st. to junction with Chapel & Wellington streets, omitting portion in Domain-road and Park-street.
3	South Yarra and Prahran Line ...	2	C	2	2	8	76	10,860	0	0	Horse	Remainder of Line.
3A	Toorak Branch...	1	C	1	2	6	92	28,800	0	0	Cable	Total Length.
3B	St. Kilda Branch ...	1	C	2	4	6	30	54,800	0	0	Cable	Total Length.
4	Sandridge Line ...	2	A	2	3	8	39	37,500	0	0	Horse	Total Length.
4A	Branch to Stables ...	2	C	0	1	0	71	700	0	0	Horse	Total Length.
4B	South Melbourne Branch	2	C	2	0	2	36	8,800	0	0	Horse	Total Length.
	Carried forward ...			38	7	2	94	702,064	10	0		



SUMMARY OF MILEAGE.

CABLE AND HORSE CONSTRUCTIONS.

			M.	F.	Ch.	Lks.	M.	F.	Ch.	Lks.	M.	F.	Ch.	Lks.
CABLE CONSTRUCTION—														
Drawing No. 1, Section A	...	...	2	3	4	85								
" " " B	...	...	5	5	2	11								
" " " C	...	...	25	2	0	71								
							33	2	7	67				
HORSE CONSTRUCTION—														
Drawing No. 1, Section A	...	...	2	3	8	39								
" " " B	...	...	0	1	1	23								
" " " C	...	...	13	2	5	67								
							15	7	5	29				
Total mileage of lines as at present projected						...				...	49	2	2	96
Total mileage as submitted by the Chairman of the Melbourne Tramway and Omnibus Company, Limited, on 18th April, 1884—														
Cable	...	...	...	...	27	1	5	65						
Horse	...	...	...	...	19	7	6	24						
											47	1	1	89
Additional mileage as at present projected						...				...	2	1	1	07

STATEMENT EXPLANATORY OF ESTIMATES.

Estimated cost as scheduled in foregoing statement	...	...	...	...	£927,606	10	0
Estimated cost as submitted by the Chairman of the Melbourne Tramway and Omnibus Company, Limited, to the Trust on Friday, 18th April, 1884	...	...	...	...	808,330	0	0
Proposed additional expenditure	...	...	...	...	£119,276	10	0
DETAILED STATEMENT OF PROPOSED ADDITIONAL EXPENDITURE—							
Converting Hobson's Bay and Carlton Line from Horse Construction to Cable Construction	...	...	...	£42,837	0	0	
Converting North Carlton Branch Line from Horse Construction to Cable Construction	...	...	...	12,000	0	0	
No. 7 Branch, not previously included (Fitzroy, Carlton, and Brunswick East)	...	...	...	5,800	0	0	
Additional Branches—							
Queen-street	...	...	...	2,230	0	0	
Deviation of Hobson's Bay and Carlton Line along Lygon and Russell Streets	...	...	...	12,785	0	0	
Carlton Line Extension, North	...	...	...	12,595	0	0	
Hobson's Bay and Carlton Line Extension along Johnson-st.	...	...	...	11,250	0	0	
				99,497	0	0	
Extra for Engines, Boilers, Gear, Land, &c., for extended branch lines	...	...	...	11,000	0	0	
				110,497	0	0	
Amount added in revising original estimates	...	...	...	8,779	10	0	
					£119,276	10	0

G. S. DUNCAN,
Engineer.

The Melbourne Tramways Trust.

ENGINEER'S OFFICES: 70 QUEEN STREET,

MELBOURNE, 16th September, 1884.

TO THE CHAIRMAN,

PUBLIC WORKS COMMITTEE, MELBOURNE TRAMWAYS TRUST.

SIR,—In anticipation of the early floating of the Melbourne Tramways Trust Loan, together with the legalising of the Amended Bill now before Parliament, I have the honour to submit the following Report, with a view to placing before you particulars of the works embraced in your scheme of Tramway Construction.

By Clause 14 in the Fourth Schedule of the principal Act it is provided that the whole of the Lines scheduled in the Act shall be constructed before the 12th day of October, 1889.

At the date of framing this Act the promoters had evidently decided on the construction of Tramways to be operated by horses; the total mileage being forty-three miles, and the estimated cost of the scheme, complete, was under £500,000.

The present proposals provide for the laying down of about fifty miles of Tramway, out of which thirty-four miles will be constructed on the Cable System, and the balance as Horse Tramways. The total expenditure is estimated at £927,000 sterling.

The present scheme thus presents an extended mileage, the introduction of the cable construction, together with about twice the expenditure, while the date of completion remains unaltered, so that the basis on which it was proposed to carry out the original scheme will now require considerable modification.

It is practicable to complete the lines of Tramways now authorised within the time required; but this can be effected only by the adoption of some practical line of procedure, and subsequent vigorous action in having the works carried out.

Up to the present, progress has been made inasmuch that the Melbourne Tramway and Omnibus Company (Limited) have contracted to construct the Richmond Cable Tramway.

The works of this line are proceeding satisfactorily. The whole of the plant required from Great Britain has been contracted for, and contracts will shortly be entered into for the local works. The completion and opening of the line for traffic may be looked for within the next nine (9) months.

The general system of construction to be adopted in the different routes has been agreed upon between your Trust and the Tramway Company; and immediately on the floating of the Loan, and the necessary power being granted by Parliament for the required deviations the work of construction can be commenced.

In considering the *modus operandi* to be adopted in carrying out a scheme of this magnitude, the question of primary importance is to determine on the most economical and expeditious method of construction.

The usual practice adopted by Municipal Corporations in Great Britain in constructing Horse Tramways is to contract for the laying down of the lines complete, excepting the supply of rails and fastenings, which are provided by the Corporations.

In the "Cable" construction is embraced the manufacture and placing of a large amount of mechanical plant, in addition to the usual permanent way and other material and labour incidental to the laying down of Horse Tramways

By a judicious arrangements of the works, contracts can be prepared so that Cable Tramways can be built satisfactorily and expeditiously by an intelligent contractor.

In the scheme as at present projected, the quantity and value of the plant and permanent way to be imported from Great Britain stands thus (approximately):—

Rails and Fastenings	...	...	...	11,000 tons	...	...	£88,000
Slot Beams	...	...	...	5,500 „	...	...	44,000
Yoke Irons	...	...	...	6,000 „	...	...	36,000
Steel Wire Rope ..	...	...	...	250 „	...	...	12,500
Tie Rods, Bolts, &c.	...	...	...	600 „	...	...	12,000
Engines (for Cable Lines)	...	...	...	...	...	...	22,000
Portland Cement, 130,000 casks	...	...	...	...	...	...	91,000
(Total value of imported material) ...							£305,500

The balance of the expenditure will be absorbed in local work, the principal details of which are the supply and placing of paving setts, concrete, and the construction and fixing of the mechanical portions of the various lines. The sites for the Stationary Engines, together with the buildings for same form a considerable item of expenditure.

RECOMMENDATIONS.

I.—Having thus epitomised the nature and magnitude of the works to be undertaken, I would recommend that, with a view to having the various lines of Tramway constructed with due expedition and economy, the whole of the work should be submitted to public tender, and that contracts for the supply of permanent way and plant, together with those for local construction should be entered into at such times as may be found most desirable to suit the varying conditions of the labour markets likely to be influenced by the construction of such an extensive system of Tramways.

II.—As an initiatory step, I would request authority to proceed with the preparation of drawings, specifications, and contracts for the supply of say, 10,000 tons of rails, slot beams, and yoke irons, which will provide for about one-half the total permanent way required. The iron market in Europe is favourable at the present time for having the work executed. The tenders can be made returnable in the latter part of December, or whatever date you may find it advisable to fix for their consideration.

III.—I would likewise request authority to proceed with the drawings, specifications, survey, and preparation of contracts for the Brunswick Cable Tramway. This is the only main line available for construction until the Branches Bill is legalised and some time will be required in preparing the necessary data, &c., by which the work may be contracted for.

I have the honour to be,

Sir,

Your obedient Servant,

GEO. S. DUNCAN,

Engineer Melbourne Tramways Trust.

SOUTH AND PORT MELBOURNE SYSTEMS.

PROPOSED CABLE TRAMWAYS.

ROUTES.

1. SOUTH MELBOURNE.—The existing route to be adhered to up to the intersection of Clarendon and Raglan streets, thence to follow along Clarendon and Bridport streets and Victoria Avenue, and terminate at the junction with Beaconsfield Parade.

2. PORT MELBOURNE.—The existing route along Sandridge-road, Crockford-street and Bay-street to be adhered to, and the Port Melbourne terminus to be fixed at the junction of Bay and Beach streets; the City of Melbourne terminus to be fixed at the junction of Queen and Collins streets.

The present horse route along Park, Montague, and Raglan streets, Kerferd Avenue and Beaconsfield Parade is not well suited for cable construction, and the proposed deviation along Bridport-street will provide a central line through the city in lieu of the authorised horse routes.

MILEAGE.

						M.	CHS.
South Melbourne Line	...	...	...	...	...	1	75
Port Melbourne Line	...	...	...	...	...	2	30
					Total Length	4	25

ESTIMATES.

				M. CHS.			
Construction of South Melbourne Line				1	75 @ £20,000	38,750	0 0
" Port "				2	30 @ 23,000	54,625	0 "
Buildings	...	...	...	...	...	9,000	0 0
Land	...	...	...	...	...	6,000	0 0
Engines and Gearing	...	...	...	...	...	15,000	0 0
Gas and Water Pipes	...	...	...	...	...	3,000	0 0
Drainage	...	...	...	...	...	19,000	0 0
Total						...	145,375 0 0
Deduct amount allowed for Horse Lines in original estimates						55,030	0 0
Total additional Expenditure						...	£90,345 0 0

HOTHAM AND WEST MELBOURNE SYSTEMS.

PROPOSED CABLE TRAMWAYS.

ROUTES.

1. In the Town of Hotham the present route to be adhered to along Victoria-street, Errol-street, Queensberry-street, Abbotsford-street, and Flemington-road.

2. In the West Melbourne system a cable line to be laid down along Spencer-street and Abbotsford-street joining the Hotham system at Queensberry-street junction. This route to take the place of the present authorised routes along King, Lonsdale and William streets.

The objections to the present authorised routes are that the excessive number of curves renders cable construction objectionable, and, in addition, the terminus being fixed at Flinders-street, necessitates the cars passing over the Elizabeth and Collins streets routes, and switching in the most crowded crossings in the City.

The route along Spencer-street and Abbotsford-street gives an easy construction and a direct connection with the Flinders-street Railway Station by means of the Richmond line now running.

MILEAGE.

				M.	CHS.
Spencer and Abbotsford Streets and Flemington Road	...	...	...	2	35
Victoria, Errol and Queensberry Streets	...	...	...	1	0
Total length	...	...	...	3	35

ESTIMATES.

	M. CHS.	P.M.						
Construction of Tramway	3	35	@	£20,000	....	...	£68,750	0 0
Land	...	...	...	...	...	...	6,000	0 0
Buildings	...	...	...	...	...	...	10,000	0 0
Engines, Boilers, and Gearing	...	...	...	...	...	...	12,000	0 0
Gas and Water Pipes	...	...	...	...	...	...	2,000	0 0
Drainage	...	...	...	...	...	...	3,000	0 0
							101,750	0 0
Deduct amount allowed for Horse Lines in original Estimates							21,000	0 0
Total additional Expenditure					...		£80,750	0 0

MEMORANDA SHOWING THE COST OF COMPLETING THE PRESENT AUTHORISED
SYSTEM OF TRAMWAYS.

NORTHERN LINES.

CABLE TRAMWAYS—

Contracts entered into up to date, including the Richmond and North Carlton Lines complete, office	£612,000	0	0
Expenditure, Supervision and Contingencies ...	40,000	0	0
Drainage ...	15,000	0	0
Altering Gas and Water Mains and Services ...	91,000	0	0
Land, Buildings, Engines and Gearing ...	11,000	0	0
Ropes ...			
	<u>£769,000</u>	<u>0</u>	<u>0</u>

HORSE TRAMWAYS—

Hotham and South Melbourne Systems ...	19,800	0	0
	<u>£788,800</u>	<u>0</u>	<u>0</u>

SOUTHERN LINES.

Cable Tramways complete ...	£275,000	0	0
Horse Tramways complete ...	82,600	0	0
	<u>357,600</u>	<u>0</u>	<u>0</u>
Southern Lines ...	788,800	0	0
Northern Lines ...			
Total cost of present authorised Tramways ...	<u>£1,146,400</u>	<u>0</u>	<u>0</u>

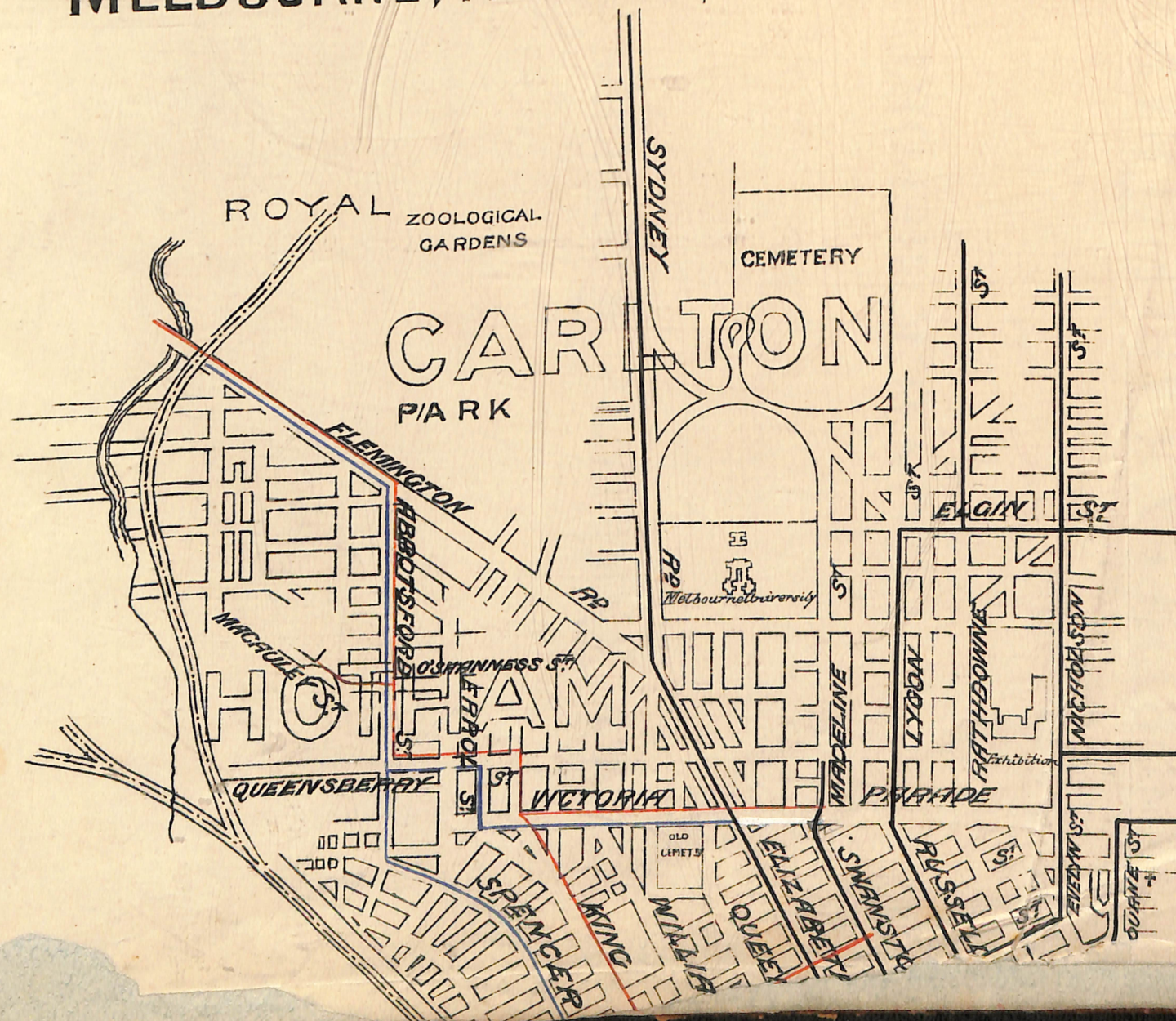
GENERAL SUMMARY.

Estimated cost of authorised scheme ...	1,146,400	0	0
Converting Hotham System to Cable Tramway (as per Sheet No. 3) ...	80,750	0	0
„ South and Port Melbourne to Cable Tramway (as per Sheet No. 2) ...	90,345	0	0
Total cost of scheme ...	<u>£1,317,495</u>	<u>0</u>	<u>0</u>

The increased cost of the system over the previous estimates, is made up in the additional cost of Land, Buildings, and Machinery, caused by the largely increased traffic which has been found necessary to provide for, together with the Drainage and altering Gas and Water Pipes. The original estimate of the Tramway construction is practically the present actual cost of the Works as now contracted for.

MELBOURNE TRAMWAYS TRUST

Sketch Plan Shewing Cable Tramways in
MELBOURNE, HOTHAM, SOUTH MELBOURNE & PORT MELBOURNE.



NOTE

AUTHORIZED CABLEWAYS

PROPOSED CABLEWAYS

AUTHORIZED ROUTES