

Melbourne Metropolitan Tramway Study

Gary Vines

2011

List of surviving heritage places

Contents






<i>Horse Tramways</i>	2
<i>Cable Tram engine houses</i>	2
<i>Cable Tram car sheds</i>	6
<i>Electric Tram Depots</i>	8
<i>Waiting Shelters</i>	12
<i>Substations</i>	20
<i>Overhead and electricity supply</i>	24
<i>Sidings and trackwork</i>	26
<i>Bridges</i>	29
<i>Workshops</i>	32
<i>Offices</i>	32
<i>Recreation buildings</i>	33
<i>Accommodation buildings</i>	33

The following lists have been primarily sourced from the existing heritage listings including Heritage victoria’s HERMES, and Online ‘Victorian Heritage Database’. As well as local heritage studies, Heritage Overlay schedules, municipal and tramway histories, and field survey.






Image	Type	Name	Constructi on date(s)	Location	Suburb	Current Listing / link to statement	Current Heritage Listings	Id No	Significance Level	Recommend ed further heritage listings
Horse Tramways										
	Horse tram depot	Hawthorn horse tram depot	1900c	Riversdale Road Auburn	Hawthorn East	Demolished and built over VPRS 12800/P1 Item H 5359				
	Zoo Horse tram route	Zoo Horse tram route	1887	McArthur Drive	Parkville	Route of former horse tram from Royal Parade to the zoo – marked by an avenue of Moreton Bay Fig trees			archaeological	HI
Cable Tram engine houses										
 	Engine House	Cable Tram Engine House – Richmond Part Demolished	1885	1 Bridge Road Cnr Hoddle St.	Richmond	CABLE TRAM ENGINE HOUSE - RICHMOND National Trust of Australia (Victoria) Heritage Inventory Site Victorian Heritage Database East perimeter walls and possible basement pits survive only	National Trust RNE HI	B3892 15349 H7822-2245	Local	HO

	Engine House	Cable Tram Engine House – Fitzroy	1886	8 Brunswick Street 81-89 Victoria Pde,	Fitzroy	Local CABLE TRAM ENGINE HOUSE - FITZROY National Trust of Australia (Victoria) Demolished 2010-11 – nominated unsuccessfully to VHR	National Trust HI	B6431	demolished	
	Engine House	Fitzroy Cable Tram Engine House	1886-7	Gertrude Street & 46-48 Nicholson	Fitzroy	Registered Australian Heritage Database Registered/National Victorian Heritage Database Heritage Inventory Site Victorian Heritage Database	VHR RNE HO National Trust HI	H0584 603 HO181 B3891 H7822-2244	State	
	Engine House	Former South Yarra Cable Tram Engine House	1887	241-257 Toorak Road	South Yarra	Local CABLE TRAM ENGINE HOUSE National Trust of Australia (Victoria) Removed From Register Australian Heritage Database Heritage Inventory Site Victorian Heritage Database	National Trust RNE HI	B6699 15349 H7822-2247, H7822-2232	State	VHR HO
 	Engine House	Johnston Street Cable Tram Engine House	1887	95-103 Johnston Street & 56 Argyle Street	Fitzroy	Heritage Inventory Site Victorian Heritage Database State CABLE TRAM ENGINE HOUSE National Trust of Australia (Victoria) Facade only	HI National Trust	H7822-2243 B6430	Local	HO

	Engine House	Former St. Kilda Road Cable Tram Engine House	1887	375-385 St. Kilda Road	Melbourne City	VHR Victorian Heritage Database Converted to Kellow Falkiner Showrooms by Harry Norris 1928. Heritage Inventory Site Victorian Heritage Database	VHR HO HI	H0668 HO490 H7822-2246	State	
	Engine House	Cable Tram Engine House	1887	253-263 Brunswick Road	Brunswick	State CABLE TRAM ENGINE HOUSE - BRUNSWICK National Trust of Australia (Victoria) Heritage Overlay Victorian Heritage Database Heritage Inventory Site Victorian Heritage Database	HO HI National Trust	HO41 H7822-2242 B6409	State	VHR
	Engine House	Former Cable Tram Engine House	1889	991-1029 Rathdowne Street	Carlton North	Registered/State Victorian Heritage Database CABLE TRAM ENGINE HOUSE & CAR DEPOT National Trust of Australia (Victoria)	VHR HO National Trust	H0718 HO210 B5995	State	

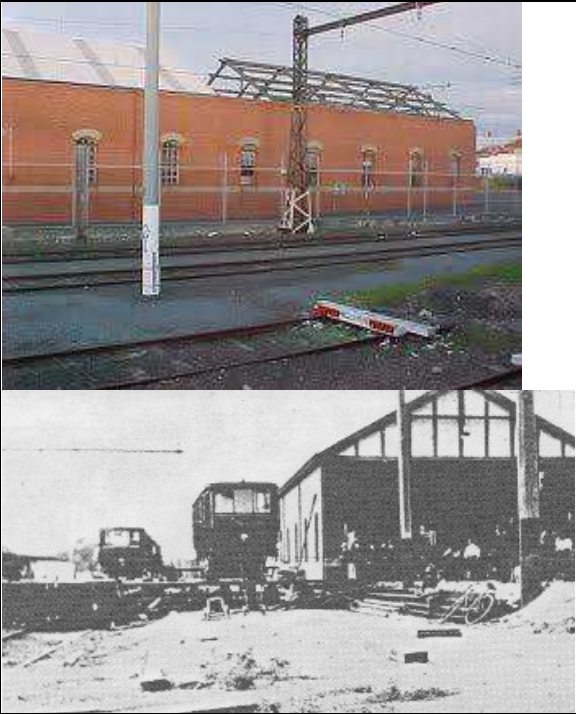
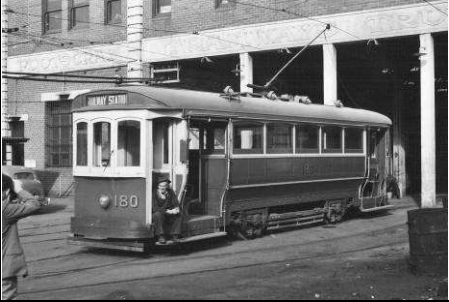


  	Engine House	Former South Melbourne Cable Tram Engine House	1890	357-361 City Road	South Melbourne	<p>Heritage Inventory Site Victorian Heritage Database</p> <p>In Port Phillip HO4 precinct only Regional</p> <p>CABLE TRAM ENGINE SHED National Trust of Australia (Victoria) Perimeter walls and facade only – gutted after fire P. Milner. 357-361 City Road, South Melbourne: University of Melbourne, Dept. of Mechanical and Manufacturing Engineering, 1989. Photo : Karen Trist ; Date(s): August 18, 1992 [Cable tram engine house, 357-61 City Rd., South Melbourne] Statle Library Victoria.</p>	HI HO National Trust	H7822-2249 Precinct HO4 B3938	Local	HO individual
	Engine House and Track Formation	Former Cable Tram Engine House and Cable Tram Track Formation	1890	187-201 Abbotsford Street	North Melbourne	Registered Victorian Heritage Database CABLE TRAM ENGINE HOUSE - NORTH National Trust of Australia (Victoria) Australian Heritage Database	VHR HO National Trust & RNE	H0988 HO283 B3890 5260	State	
	Engine House, Car Shed & Track Precinct	Former Northcote Cable Tram Building (Engine House, Car Shed & Track Precinct)	1890	626-628 High Street cnr Martin St.	Thornbury	VHR Victorian Heritage Database Heritage Inventory Site Victorian Heritage Database	VHR HO HI	H2129 HO 45 H7822-2241	State	




	Engine House	Former Windsor Cable Tram Engine House	1891	105 Wellington Street	St. Kilda	Heritage Inventory Site Victorian Heritage Database	HO HI	HO360 H7822-2248	State	VHR
	Car Shed	Former Richmond Cable Tram Car Shed facade	1885	649-651 Bridge Road	Richmond	Heritage Inventory Site Victorian Heritage Database Rejected Place Australian Heritage Database Façade only	HI & HO RNE	H7822-2228 HO228 166	Local	
Cable Tram car sheds										
	Car Shed	Former Victoria Bridge Cable Tram Car Shed	1886	640 Victoria Street	Richmond	Heritage Inventory Site Victorian Heritage Database demolished	HI	H7922-0469	archaeological	
	Car Shed	Former North Fitzroy Cable Tram Car Shed	1886	337-361 St Georges Rd & 2-16 Pilkington Street	Fitzroy North	Heritage Inventory Site Victorian Heritage Database Archaeological site only demolished	HI	H7822-2234	archaeological	
	Car Shed	Former Johnston Street Cable Tram Car Shed	1887	436-438 Johnston St.	Abbotsford	Heritage Inventory Site Victorian Heritage Database demolished	HI	H7822-2236	archaeological	
	Car Shed	Former Brunswick Cable Tram Car Shed demolished	1887	807-823 Sydney Road (site of later M&MTB depot)	Brunswick	Heritage Inventory Site Victorian Heritage Database demolished	HI HO	H7822-2230 HO171	archaeological	
	Car Shed office	Former Clifton Hill Cable Tram Car Shed office	1887	480-484 Queens Parade & 266-284 Mckean Street	Fitzroy North	Heritage Inventory Site Victorian Heritage Database 'TB' on plaque on front denoting Tramway Board on office building Rare evidence of Tramways Board improvements of cable system	HI	H7822-2240	State	VHR HO





	Car Shed	Former Toorak Cable Tram Car Shed and Precinct	1888	625 Chapel Street	South Yarra	Heritage Inventory Site Victorian Heritage Database Heritage Inventory Site Victorian Heritage Database Former Cable Tram Engine House/Capitol Bakeries conservation analysis / Michael Taylor	HI	H7822-2231 H7822-2259	State	VHR HO
	Car Shed	Former Cable Tram Car Shed	1888	92-98 Chapel Street Balaclava	St Kilda	Heritage Inventory Site Victorian Heritage Database demolished	HI	H7822-2232	demolished	
	Car Shed	Former St Kilda Cable Tram Car Shed		95-111 Acland St	St Kilda	Heritage Inventory Site Victorian Heritage Database demolished	HI	H7822-2229	demolished	
	Car Shed office	Former Brighton Road Cable Tram Car Shed (altered) and office MT&OC	1888 – 1918	16 Brighton Rd & 2 Brunning Street	Balaclava	Heritage Inventory Site Victorian Heritage Database 1918 2 nd story office addition by Tramway Board – architect Barlow	HI	H7822-2238	State	VHR HO
	Car Shed	Former Rathdowne Street Cable Tram Car Shed	1889	1023 Rathdowne St.	Abbotsford	Heritage Inventory Site Victorian Heritage Database Listed with engine house	VHR HO HI	H0718 HO H7822-2236	State	
	Car Shed and office	Former South Melbourne Cable Tram Car Shed (demolished) and office MT&OC	1890-1918	176-178 Victoria Avenue	Albert Park	Heritage Inventory Site Victorian Heritage Database 1918 2 nd storey to office by Tramway Board architect Stapley.	HI	H7822-2233	State	VHR HO
 <i>National Trust image c 1980s</i>	Car Shed	Cable Tram Car Shed – Port Melbourne demolished	1890	65 Beach St	Port Melbourne	State CABLE TRAM CAR SHED - PORT MELBOURNE National Trust of Australia (Victoria) was most intact car shed of. Designed by architects Twentyman and Askew Heritage Inventory Site Victorian Heritage Database Demolished for development in 1990s	National Trust HI	B6496 H7822-2226	archaeological	
	Car Shed	Former North Melbourne Cable Tram Car Shed	1890	379-411 Flemington Road	North Melbourne	Heritage Inventory Site Victorian Heritage Database demolished	HI	H7822-2235	demolished	

	Car Shed	Former North Melbourne Cable Tram Car Shed	1918	8-14 Howard Street	North Melbourne	Heritage Inventory Site Victorian Heritage Database Evidence of improvements under Tramways Board	HI	H7822-2227	Local	HO
Electric Tram Depots										
 	Depot	Elwood VR Tram Depot	1906	St.Kilda St and Head Street	Elwood	demolished			Demolished archaeological	HI
	Depot	Essendon Tramway Depot	1906	318 Mt Alexander Road	Travancore	Registered Victorian Heritage Database	VHR HO	H1215 HO141	State	






										
	Depot	Malvern Tram Depot	1910	Coldblo Rd (off Glenferrie Road)	Malvern (Armadale)	– extended by MMTB 1930Registered Victorian Heritage Database State TRAM DEPOT - MALVERN National Trust of Australia (Victoria)	VHR HO National Trust	H0910 HO23 B6152	State	
	Depot	Kew PMTT Depot tram shed and shops	1915	Barkers Road and High Street	Kew	– extended by MMTB 1927			State	VHR HO
	Depot	Hawthorn Tramways Trust Depot	1916	8 Wallen Road	Hawthorn	Registered/State Victorian Heritage Database State TRAM DEPOT National Trust of Australia (Victoria)	VHR HO National Trust VHI	H0876 HO133	State	
	Depot	Coburg Tram Depot	1918?	Nicholson Street	Coburg East	Used by MMTB for overhead maintenance depot, Demolished 2007 for housing development			demolished	






	Depot	Sandringham VR Tram Depot	1919	Station Street & Bay Road (railway yard)	Sandringham	Rare evidence – only surviving substantial structure of Victorian Railways tramways facilities and infrastructure – Sandringham Conservation Study recommended VHR	HO	HO328	State	VHR
	Depot	Footscray Tram Depot	1920	Buckley Street	Footscray	Closed 19? Used for bus depot and tram sheds demolished 1980s - trams down under http://tdu.to/19430.att			Demolished archaeological	HI
	Depot	Thornbury Tram Depot demolished	1920	18 Miller Street & Street Georges Rd	Preston	Heritage Inventory Site Victorian Heritage Database Demolished 2006-7	HI	H7822-0906	Demolished archaeological	
	Depot	Glen Huntly M&MTB Tram Depot	1923	Glen Huntly Road,	Caulfield South	Included in Heritage Overlay Victorian Heritage Database	HO	HO70	Local	






	Depot, tram shed administration office	Camberwell MMTB Depot tram shed and substation (demolished)	1925	160-170 Camberwell Road administration office 8 Council Street	Hawthorn East / Camberwell	Camberwell Heritage Study 2008, architect for the Hawthorn, Kew and Malvern Tram Depots, Leonard Flannagan, is still listed in the Sands & McDougal Directory for 1932, but the design, at this fairly late stage, was probably by the MMTB design office, as was the c1924 rotary converter substation at 30 Station Street nearby. The new tram shed does not share Flannagan's detailing or style usage. The tram shed forms the northern part of Camberwell Tram Depot,			State	VHR HO
	Depot	Hannah St South Melbourne tram depot	1925	Hannah St	South Melbourne	Demolished (Service Tram No 11W, South Melbourne Depot, Melbourne, Victoria The Kingsway, South Melbourne, Victoria. Scanned from slide. Taken 1979)			demolished	
	Depot	Brunswick MMTB tram depot	1936	Sydney Road	Brunswick	Included in Moreland Heritage Overlay Victorian Heritage Database	HO	HO171	State	VHR



	Car Shed Depot and workshop	Former Nicholson Street Cable Tram Car Shed and Workshop - North Fitzroy Tram Depot	1888? Car work-shop 1955 tram and bus depot	734-768 Nicholson Street & 9 Scotchmer Street	Fitzroy North	Heritage Inventory Site Victorian Heritage Database demolished Originally part of Cable Tram car workshops, North Fitzroy tram and bus depot opened in 1955 following the re-introduction of trams in Bourke St after conversion of these routes from cable. Ceased operating 1993 as South Melbourne depot took over North Fitzroy's share of route 96. The depot was used for the storage of several private trams until 2009, when these cars were relocated. The depot currently houses the City Circle W-Class fleet, and operates as a satellite depot of Southbank.	HI	H7822-2237	Local	HO
 	Depot	East Preston MMTB depot	1955	Plenty Road	Preston East	Proposed in Darebin Heritage Review Victorian Heritage Database	HO	HO250	Local	
Waiting Shelters										
	Shelter	Tram Shelter	1916	Macarthur Street & St. Andrews Place	East Melbourne	Registered/State Victorian Heritage Database TRAM SHELTER National Trust of Australia (Victoria) Australian Heritage Database Tramways Board shelter	VHR HO National Trust RNE	H1870 HO888 B4747 15746	State	

	Shelter	Tram Shelter	1927	St Kilda Rd & High Street	Melbourne City	Registered Victorian Heritage Database Registered Australian Heritage Database	VHR HO RNE	H1868 HO909 15745	State	
 	Shelter	Tram Shelter	1917	St Kilda Rd & Dorcas Street	South Melbourne	Registered Victorian Heritage Database Registered Australian Heritage Database Tramways Board shelter designed in 1916 by Frank Stapley	VHR HO RNE NT	H1869 HO889 18944 B6853	State	
	Shelter	Tram Shelter	1927	St Kilda Rd & Lorne Street Morres Street	Ripponlea Melbourne City	Registered Victorian Heritage Database Indicative Place Australian Heritage Database TRAM SHELTERS National Trust of Australia (Victoria)	VHR HO RNE National Trust	H1867 HO247 102743 B5346	State	
	Shelter	Tram Shelter	1915 – reconstruc ted 2001	St. Kilda Rd & Commercial Rd. NE corner	Melbourne	Registered Australian Heritage Database TRAM SHELTER National Trust of Australia (Victoria) PMTT built shelter designed by L J Flannagan 1915 – rebuilt 2001 after demolition by truck Important despite reconstruction – see St.Kilda Pier Kiosk as precedent	RNE National Trust	18943 B7043	State	VHR HO



										
   <p>http://www.picturevictoria.vic.gov.au/site/stonnington/miscellaneous/12439.html</p>	Shelter	Tram Shelter	1912	Dandenong Road Median Caulfield North & Cnr. Alma Road	Caulfield East	<p>Included in Heritage Overlay Victorian Heritage Database Caulfield Conservation Study, Andrew Ward, Architectural Historian, 1994 State TRAM SHELTER National Trust of Australia (Victoria) PMTT built shelter</p>	VHR HO National Trust	H0230 HO19 B7040	State	
	Shelter	St Vincent Plaza Tram Shelter	1933 (moved 2007)	Victoria Parade, cnr Brunswick St (St Vincent Plaza)	Melbourne	<p>State TRAM SHELTER National Trust of Australia (Victoria) Reconstructed and relocated 2010 Architect A G Monsborough? Rare structure – one of largest shelters of unique form</p>	National Trust	B7050	State	VHR HO

										
	Shelter	Domain Interchange	1970s	St Kilda Road	Melbourne	1970s shelters with some earlier components			Local	HO
 	Shelter	Tram Shelter	1950	Batman Ave,	Melbourne	File only Demolished – relocated to Tramway Museum Society vic at Bylands. TRAM SHELTER National Trust of Australia (Victoria)	National Trust	B6493 B435	demolished	
	Shelter	Tram Shelter		Riversdale Road (Wattle Park)	Burwood	former Prahran and Malvern Tramways Trust passenger waiting shelter (now used as a curator's office)	VHR HO National Trust	H0904 HO4 B4615	State	

	Shelter	Tram Shelter	1928 c	Riversdale Road (Wattle Park) cnr Warrigal road	Burwood	Registered	VHR HO	H0904 HO4	State	
 	Shelter	Tram Shelter	1928 c	Riversdale Road (Wattle Park) near Allandale St,	Burwood	Registered	VHR HO	H0904 HO4	State	
	Shelter	Tram Shelter	1917	Riversdale Road, outside Camberwell Tram Depot, East Hawthorn	Camberwell	State TRAM SHELTER (4) National Trust of Australia (Victoria) possibly designed by L J Flannagan, and built in c1917 for the Hawthorn Tramways Trust	National Trust	B7041	State	VHR HO
	Shelter	Tram Shelter	1917	Riversdale Road, S.E. cnr Highfield Street, Camberwell	Camberwell	State TRAM SHELTER (4) National Trust of Australia (Victoria) possibly designed by L J Flannagan, and built in c1917 for the Hawthorn Tramways Trust	National Trust	B7041	State	VHR HO

	Shelter	Tram Shelter	1917	Camberwell Road, Fordham Gardens, Camberwell	Camberwell	State TRAM SHELTER (4) National Trust of Australia (Victoria) possibly designed by L J Flannagan, and built in c1917 for the Hawthorn Tramways Trust	National Trust	B7041	State	VHR HO
	Shelter	Tram Shelter	1917	Camberwell Road, S.W. cnr Bowen Street, Camberwell City of Boroondara	Camberwell	State TRAM SHELTER (4) National Trust of Australia (Victoria) possibly designed by L J Flannagan, and built in c1917 for the Hawthorn Tramways Trust	National Trust	B7041	State	VHR HO
 	Shelter	Tram Shelter	1906 moved to Brighton gardens 1909	The Esplanade (opposite Norwood Avenue), now Green Point gardens	Brighton	Tramway shelter from St Kilda Brighton tramway, originally at Park Street terminus (DSE record, moved to Green Point Reserve)			State	VHR
	Pedestrian Tunnel	Tramway tunnel	1906	The Esplanade	Brighton	Tramway tunnel	HO	HO162	Local	
	Shelter	Tram Shelter	1906	Beach road near Kinane St	Brighton	Remnant of St Kilda Brighton tramway Bayside Heritage Review	Bayside Heritage Review, p.949	HO165	Local	HO






	Shelter	Tram Shelter	1906	The Esplanade (opposite Dendy Street),	Brighton	Remnant of St Kilda Brighton tramway	HO Bayside Heritage Review, p.947	HO166	Local	
 	Shelter Verandah	Tram Verandah Shelter	1916-17	Cnr. Balaclava & Orrong Rds,	Caulfield North	Registered/Regional Victorian Heritage Database Registered Australian Heritage Database CASTREET IRON TRAM SHELTER - CAULFIELD National Trust of Australia (Victoria)	VHR HO RNE National Trust	H0174 HO5 5746 B3312	State	
 	Shelter (Verandah)	Tram Verandah Shelter	C1913	Cotham Road	Kew	Registered/State Victorian Heritage Database Gleneira HO Victorian Heritage Database CAST-IRON TRAM SHELTER National Trust of Australia (Victoria)	VHR HO National Trust	H0173 HO484	State	
	Shelter Verandah	Tram Verandah Shelter	C1915	Malvern Rd & Orrong Road	Armadale	VHR Victorian Heritage Database Registered/State Victorian Heritage Database CAST-IRON TRAM SHELTER National Trust of Australia (Victoria)	VHR HO National Trust	H0175 HO365 B7051	State	

		Shelter type		1960s on	various		No examples listed				
		Shelter type		1980s	various		No examples listed				
		Shelter type		1980s	various		No examples listed				
		Signal Cabin, Waiting Shelter and Conveniences	Tramway Signal Cabin, Waiting Shelter and Conveniences	1928	Swanston Street & Victoria Street	Melbourne City	Registered Victorian Heritage Database File Only architect A G Monsborough,	VHR HO National Trust	H1686 HO911 B6930	State	

Substations										
 	Substation	P&MTT electricity Substation	1914	4-6 Rusden Street	Elsternwick	Included in heritage overlay Victorian Heritage Database	HO	HO58	State	VHR
	Substation	M&MTB electricity Substation	1925	Maribyrnong Road	Ascot Vale	(2 rectifiers?)			State	VHR HO
	Substation	electricity Substation (in part of former cable tram engine house)	1925	Brunswick Rd and Black St.	Brunswick	1 rectifiers (Vicrtack) Part of Brunswick Cable Tram enginehouse	HO National Trust	Listed with engine house	State	VHR (with cable tram engine house)
	Substation	M&MTB electricity Substation	1925	30 Station Street, Camberwell	Camberwell	Camberwell Heritage Study 2008 recommended for HO architect for the Hawthorn, Kew and Malvern Tram Depots, Leonard Flannagan, is still listed in the Sands & McDougal Directory for 1932, but the design, at this fairly late stage, was probably by the MMTB design office, as was the c1924 rotary converter substation at 30 Station Street nearby. The new tram shed does not share Flannagan's detailing or style usage. Modern equipment			State	VHR HO




	Substation	M&MTB electricity Substation	1925	Bouverie & Queensberry Streets	Carlton	NOMINATED for VHR Carlton 1925 – Modern equipment			State	VHR HO
	Substation	M&MTB electricity Substation	1925	Clarke & Hancock Streets	South Melbourne		HO	HO334	Local	
	Substation	(part of depot)	1925	Glen Huntly road	Glenhuntly	1 rectifiers (to New Zealand)1 BTH (to Brisbane)			Local	
	Substation	Daly St M&MTB electricity Substation	1927	2 Daly Street	South Yarra	NOMINATED for VHR 1 rectifiers BTH (?) Converted to Le Louvre store A G Monsborough, possibly the first completed after his appointment as architect to the M&MTB in 1926 identified local heritage in Context 2009.	HO		State	VHR HO

										
	Substation	M&MTB electricity Substation	1929	Young Street	Fitzroy	Modern equipment Victorian Heritage Database City of Yarra Review of Heritage Overlay Areas 2007 Appendix 7, Graeme Butler	HO	HO334	Local	
	Substation	(addition to tram depot)	1930	Coldblo road	Malvern	2 rectifiers – association with depot	VHR HO	H0910 HO23	State	
				138A Barkly Street	North Fitzroy					
	Substation	Holden St. Substation	1931	2 Holden Street	North Fitzroy	Modern equipment (old workshops were located to the north and east)			Local	HO
	Substation	Prestone workshops substation	1932	Preston Tramway Workshops Miller Street	Preston	Registered as part of tramway workshops contained 1 Hewittic rectifier 1 GEC (?) transformer	VHR	H2031	Local	

	Substation		1934	Whitehorse Road	Deepdene	1 Hewittic rectifier (Victrack) BTH (Victrack) transformers				
	Substation	Sawson St M&MTB substation	1935	196A Dawson Street, cnr Moreland Raod	West Brunswick	1 Hewittic rectifier (Victrack) transformer	HO	HO64	Local	
	Substation	Maribyrnong M&MTB tram substation	1942	Gordon Street	Maribyrnong	1 BTH rectifier (VicTrack) 1 BTH (?) transformer				
	Substation	Maribyrnong M&MTB tram substation	1943	Off Raleigh Road	Maribyrnong	NOMINATED for VHR 1 rectifier BTH (VicTrack)	VHR?		State if rectifiers intact	VHR ? if contents intact
	Substation	M&MTB tram substation	1955	3-5 Martin Street	Thornbury	Darebin Heritage Study Similar to Clifton Hill and Kew. Victorian Heritage Database	HO	HO288	Local	

		Substation	M&MTB Substation	1955	Queens Parade	Clifton Hill	Associated with remodelling of Clifton Hill cable tram depot			Local	HO
		Substation	Coburg M&MTB substation	1957	Nicholson Street	Coburg	2 GEC (Victrack 1) transformer near East Coburg depot – demolished and replaced c2009				
		Substation	Kew Depot Substation		Barkers Road	Kew	demolished				
Overhead and electricity supply											
		Control cabinet	M&MTB Control cabinet		Landsdale Street	Melbourne	Cast iron cabinets for electric control				
		Control cabinet	M&MTB Control cabinet		Elizabeth Street	Melbourne	Cast iron cabinets for electric control				
		Ornamental Tram Poles	Ornamental Tram Poles	C1925	Victoria Parade	East Melbourne	State ORNAMENTAL TRAM POLES St. Kilda, NORTH MELBOURNE National Trust of Australia (Victoria)	VHR HO National Trust	H1023 HO B6438	State	






		Ornamental Tram Poles	Ornamental Tram Poles	C1925	Peel St	North Melbourne	State ORNAMENTAL TRAM POLES St. Kilda, NORTH MELBOURNE National Trust of Australia (Victoria)	National Trust	B6438	State	
		Ornamental Tramway Overhead Poles	Ornamental Tram Poles	C1925	Fitzroy St	St. Kilda	State ORNAMENTAL TRAM POLES St. Kilda, NORTH MELBOURNE National Trust of Australia (Victoria) HO125 , HO189 , HO299 , HO30	VHR HO National Trust	H1023 HO125 B6438	State	
		Ornamental Tramway Overhead Poles	Ornamental Tramway Overhead Poles	1911	Dandenong Road	CAULFIELD NORTH and ST KILDA EAST, GLEN EIRA CITY	Registered/State Victorian Heritage Database ORNAMENTAL TRAM POLES - DANDENONG ROAD National Trust of Australia (Victoria)	VHR HO National Trust	H1023 HO101 B6437	State	

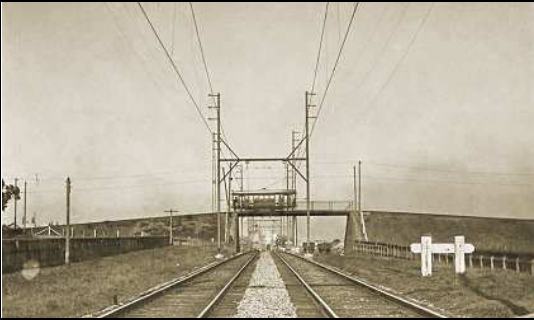



		Plaque	Historic plaque	1906/1990	corner of Broadway and Glenhuntly Road	Elwood	plaque on the corner of Broadway and Glenhuntly Road beside city of Port Phillip				
		Tram pole	Tram Pole	1906	corner of Broadway and Glenhuntly Road	Elwood	plaque on the corner of Broadway and Glenhuntly Road beside a 1906 tram pole that still bears the faded imprint 'Cars stop here'.				
Sidings and trackwork											
		Grand Union Tramway Junction	Grand Union Tramway Junction	1920	Balaclava & Hawthorn Road	Caulfield North	Heritage Overlay Victorian Heritage Database	VHR HO National Trust	H0227 HO148	State	
		Tram Square	Tram Square (rail/tram level crossing)	1920	Epsom Road Essendon Toorak Rd, Kooyong Prospect Hill Rd, Riversdale Burke Rd, Gardiner Glenferrie Rd, Kooyong Glenhuntly Rd, Glenhuntly		Epsom Road level crossing at Showgrounds station (which actually had hand operated gates although the power was controlled by the signal box). This was grade separated in 1925 by building a rail bridge over the road. Nicholson St Footscray on St. Albans rail line crossed by the Williamstown Road tram line that also led to the tram depot. It was grade separated in 1927 in conjunction with the creating of the Bunbury St. tunnel and goods lines. Glenhuntly Rd, Elsternwick (eliminated with grade separation in appx 1970s)				HI
		Siding		1920	Napier Street	Essendon	Used for Football Traffic				
		Siding		1920	Barkly Street	North Fitzroy	used to store trams that carried footy fans to the Brunswick Street Oval (home to the Fitzroy Football Club). However the siding				

						was removed sometime after 1993.				
	Siding/shunt		1920	Wellington Street	East Melbourne	Used for football traffic only				
	Siding	Maribyrnong Explosives Factory Siding	1940?	Raleigh Road	Maribyrnong	Constructed for defence traffic				HI
	Siding		1920	Brunswick Road	Brunswick	part of the Holden Street tramline which was removed in 1972.				HI
	Siding		1920	Victoria Street		used to feature) several crossovers between the Elizabeth street extension and Swanston Street used for tram transfers between Essendon Depot and Glenhuntly Depot, Malvern Depot and APSC				
	Baths	Tramway Baths		Victoria Street & Beaconsfield Parade	Albert Park	Heritage Inventory Site Victorian Heritage Database	HI	H7822-0463		
	Archaeological site	Exhibition track	1888	Exhibition Gardens	Carlton	Possible evidence of first electric tram in Australia				HI
	Archaeological site	Doncaster tram shed	1889	Bushy creek east side of Station Street, just north of Wimmera Street and opposite Paisley Street. bus shelter constructed in the form of the original toast rack Box Hill tram No.1 - quite unusual!	Box Hill Nth	centenary of the opening of the Box Hill - Doncaster line in 1989 three interpretative panels were erected along Station Street, Box Hill and Tram Road, Doncaster. - east wall of the building (former Post Office) - south west corner of Station Street and Whitehorse Rd & plaque mounted beside it that was originally on a stone cairn at the kerb (demolished by a car) - west side of Tram Road, just south of Doncaster Road.	Marked by council interpretative panel			HI
	Track	Cable Tram Track	1886	680 Bourke Street	Melbourne	Demolished CABLE TRAM TRACK National Trust of Australia (Victoria) removed	National Trust	B5088		
	Track Precinct	Former Johnston Street Cable Tram Shed Track Precinct		Johnston St	Abbotsford	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2256		
	Track Precinct	Former South Melbourne Cable Tram Car Shed Track Precinct		Victoria Avenue	Albert Park	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2263		
	Track Precinct	Former Brighton Rd Cable Tram Car Shed Track Precinct		Brighton Road	Balaclava & Elwood	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2261		
	Track Precinct	Former Brunswick Cable Tram Car Shed Track Precinct		Sydney Road	Brunswick	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2252		
	Track Precinct	Former Brunswick Road Cable Tram Engine House Track Precinct		253-263 Brunswick Road	Brunswick	Heritage Inventory Site/Registered Victorian Heritage Database Australian Heritage Database	HI RNE	H7822-2217 18517		
	Track Precinct	Former Gertrude Street Cable Tram Engine		Nicholson Street & Gertrude Street Fitzroy & Nicholson Street	Carlton	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2218		

		House Track Precinct								
	Track Precinct	Former Clifton Hill Cable Tram Car Shed Track Precinct		Queens Parade,	Clifton Hill	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2255		
	Track Precinct	Former Johnston Street Cable Tram Engine House Track Precinct		95-105 Johnston Street	Fitzroy	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2224		
	Track Precinct	Former Johnston Street Track Precinct		95-105 Johnston Street	Fitzroy	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2224		
	Track Precinct	Former Brunswick Street Cable Tram Engine House Track Precinct		Brunswick Street & Victoria Parade, & Victoria Parade & Gisborne Street	Fitzroy East Melbourne	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2223		
	Track Precinct	Former Nicholson Street Cable Tram Car Shed Track Precinct		Nicholson Street	Fitzroy North	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2253		
	Track Precinct	Former North Fitzroy Cable Tram Car Shed Track Precinct		Street Georges Road	Fitzroy North	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2254		
	Track Precinct	Former St. Kilda Road Cable Tram Engine House Track Precinct		St. Kilda Rd & Bromby Street	Melbourne City	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2220		
	Track Precinct	Former North Melbourne Cable Tram Car Shed Track Precinct		Flemington Road	North Melbourne	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2251		
	Track Precinct	Former North Melbourne Cable Tram Car Shed Track Precinct		Howard Street	North Melbourne	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2265		
	Track Precinct	Former Port Melbourne Cable Tram Car Shed Track Precinct		Beach Street	Port Melbourne	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2264		
	Track Precinct	Former Richmond Cable Tram Car Shed Track Precinct		649-651 Bridge Road	Richmond	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2257		
	Track Precinct	Former Richmond Cable Tram Engine House Track Precinct		1 Bridge Road	Richmond	Heritage inventory Site Victorian Heritage Database	HI	H7822-2216		
	Track Precinct	Former Victoria Bridge Cable Tram Car Shed Track Precinct		Victoria Street Abbotsford & Victoria Street	Richmond	Heritage Inventory Site Victorian Heritage Database	HI	H7922-0470		
	Track Precinct	Former South Melbourne Cable Tram Engine House Track Precinct		357-367 City Road	South Melbourne	Heritage Inventory Site Victorian Heritage Database Registered Australian Heritage Database	HI RNE	H7822-2222 15198		
	Track Precinct	Former South Yarra Cable		257 Toorak Road	South Yarra	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2219		


		Tram Engine House Track Precinct								
	Track Precinct	Former Prahran Cable Tram Car Shed Track Precinct		Chapel Street	St. Kilda	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2260		
	Track Precinct	Former St. Kilda Cable Tram Car Shed Track Precinct		Acland St	St. Kilda	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2262		
	Track Precinct	Former Windsor Cable Tram Engine House Track Precinct		105 Wellington Street	St. Kilda	Heritage Inventory Site Victorian Heritage Database	HI	H7822-2221		
	Tracks, North Melbourne	Cable Tram Tracks, North Melbourne		Abbotsford Street	North Melbourne	Heritage Inventory Site Victorian Heritage Database File only	HI National Trust	H7822-0981 B1810		
	Terminus	Bakers Road Tram Terminus, demolished		Bakers Road	Coburg North	Bakers Road Tram Terminus				
Bridges										
	Bridge	Flemington Bridge/ Mains Bridge	1913 from modified 1868 original	Mount Alexander Road, over Moonee Ponds Creek	Flemington	Strengthened for trams by John Monash and RCMPCo Monash Bridges	HO National Trust	HO028 B7312 (file only?)	State	
	Bridge	Victoria Bridge	1888/1894	Victoria Street Richmond & Barkers Road	Kew	Registered/State Victorian Heritage Database ORNAMENTAL TRAM WIRE SUPPORTS (FORMER PR National Trust of Australia (Victoria))	VHR HO National Trust	H0374 HO292 HO480 B6641	State	
	Bridge	Wallen Road Bridge	1881	Wallen Road Hawthorn & Swan Street	Richmond	Registered/State Victorian Heritage Database ORNAMENTAL TRAM WIRE SUPPORTS National Trust of Australia (Victoria)	VHR HO National Trust	H0380 HO287 HO487 B6640	State	

		Bridge	Hawthorn Bridge	1861, 1888, 1916	Hawthorn		Reconstructed to cope with heavier loads of trams 1916. With ornamental tram poles	VHR HO National Trust	H0050 HO481 HO229 B6649	State	
		Bridge	Princes Bridge	1888	Melbourne		New Bridge built to cope with heavier loads of trams. Victorian Heritage Database	VHR HO National Trust	H1447 HO790	State	
		Bridge	Church Street Bridge	1924	Church Street and Chapel Street over Yarra river	Richmond	New Bridge built to cope with heavier loads of trams.	VHR HO National Trust	H1917 HO239 B5505	State	
		Bridge	St Georges Road Bridge		Over Merri Creek	Fitzroy North	Plaques from FN&PTT reconstruction of bridge to cope with heavier tram loadings – bluestone footings for cast iron columns of original visible				
		Bridge	Miller St tram bridge	1925	Miller St over Epping railway	Thornbury	Darrebin Heritage Review, Victorian Heritage Database The 'hump' is known more commonly by trammies as Mount Buggery Widened, lengthened and reconstructed in 1980s for dual tracks over and Preston Workshops test track and road under	HO	HO236	Local	

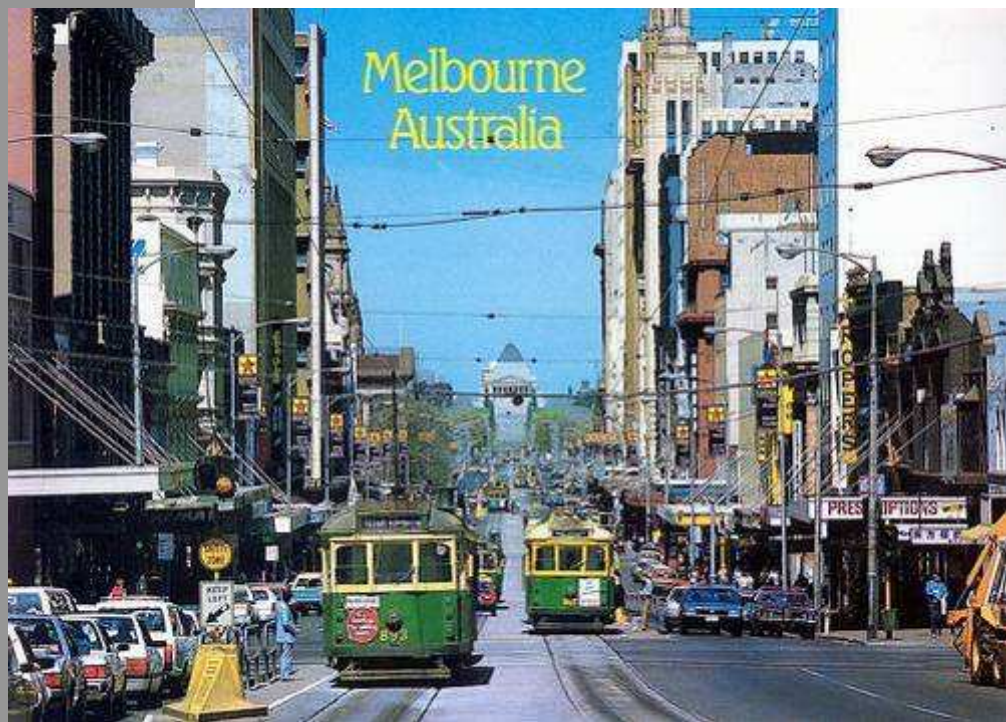
										
	Bridge (modified)	High St rail over bridge	1924	High Street	Clifton Hill	Road lowered and bridge modified to allow busses when cable tram closed.			Local	HO
	Bridge	Zoo line rail over tram bridge		Off Poplar Ave	Parkville	Rare example of dedicated rail over tramway only bridge			Local	HO
	Bridge	St Kilda Junction tram bridge	1966-8	St Kilda Junction	St Kilda					

Workshops										
	Workshops	Preston Tramway Workshops		Miller Street	Preston	Registered Victorian Heritage Database Victorian Heritage Database Heritage Inventory Site	VHR HI HO	H2031 H7822-0960 HO144	State	
	Workshops	Holden Street Tram Workshops		Holden Street and St. Georges Road	Fitzroy	Substation remains – site demolished and sold 1937 (The Argus Monday 20 December 1937 p.2)				
Offices										
	Office Building	Former Melbourne Tramway and Omnibus Company Building	1891	669-675 Bourke Street and 20-38 Godfrey Street	Melbourne City	Registered Victorian Heritage Database Heritage Inventory Site Victorian Heritage Database	VHR HO HI	H0785 HO553 H7822-1577	State	
	Office building	Melbourne and Metropolitan Tramway Board Offices	1934	93-103, Victoria Parade	Fitzroy	City of Yarra Review of Heritage Precincts 2007	HO	HO334	Local	

	Office building	Melbourne and Metropolitan Tramway Board Offices,	1937	616 Little Collins Street (at rear of former MT&OC building Bourke St.)	Melbourne	Melbourne Buildings			State	VHR HO
Recreation buildings										
	Archaeological site	Central Park Kiosk	1912	Central Park Street	Malvern	Designed by Edwin Ruck. Central Park history City of Stonnington				HI
	Kiosk	Wattle Park Chalet	1928	Wattle Park		Wattle Park purchased by PMTT and developed by MMTB Victorian Heritage Register National Trust	VHR HO NT	H0904 HO4 G13147	State	
Accommodation buildings										
	Guesthouses Staff accommodation	Canterbury Mansions Malone's Family Hotel	1889, taken over by MMBW 1925?	208 Canterbury Road And 126 Maling Road	Canterbury	Purchased by M&MTB in 1950s to house London recruits. Victorian Heritage Database	VHR HO NT	H0869 HO29 B4908	State	
	Guesthouses	'Cavendish'		409 Burwood Road	Hawthorn	Said to be first coffee house in Melbourne, purchased by M&MTB 1960s for migrant trainees – demolished (now Swinburn site)			Local?	
	Guesthouses	'Warwick'			East Malvern	Purchased Nov 1950			Local?	

	Hospital	Vimy House 'Bendigonia'	1883 Purchased 1949	25 Queens Road, and then expanding in into the adjoining property ‘.’”	South Melbourne	Tramways Friendly Society Victorian Heritage Database	VHR HO NT	H0909 HO234 B4614	State	
	Hospital	Vimy House 'Bathurst'	Purchased 1961	Queens Road	South Melbourne	Tramways Friendly Society			Local?	
	Hospital	Vimy House	1975	Studley Avenue	Kew	Tramways Friendly Society site of Dr Penfold's home officially opened by the premier R J Hamer in			Local?	
	Nursing Home	Karinya Nursing Home	purchased 1985	The Broadway	Camberwell	Tramways Friendly Society			Local?	

Melbourne Metropolitan Tramway Heritage Study



Melbourne Metropolitan Tramway Heritage Study

2011

Gary Vines

Report for Heritage Victoria

Ballarat:

449 Doveton Street North Ballarat 3350
Ph: (03) 5331 7000 Fax: (03) 5331 7033
email: ballarat@biosisresearch.com.au

Melbourne:

38 Bertie Street Port Melbourne 3207
Ph: (03) 9646 9499 Fax: (03) 9646 9242
email: melbourne@biosisresearch.com.au

Canberra:

Unit 16/2 Yallourn Street Fyshwick 2609
Ph: (02) 6228 1599 Fax: (02) 6280 8752
email: canberra@biosisresearch.com.au

Sydney:

18-20 Mandible Street Alexandria 2015
Ph: (02) 9690 2777 Fax: (02) 9690 2577
email: sydney@biosisresearch.com.au

Wangaratta:

PO Box 943 Wangaratta 3676
Ph: (03) 5721 9453 Fax: (03) 5721 9454
email: wangaratta@biosisresearch.com.au

Wollongong:

8 Tate Street Wollongong 2500
Ph: (02) 4229 5222 Fax: (02) 4229 55
email: wollongong@biosisresearch.com.au

Biosis Research Project – 11148
Date of Completion – 20/01/2012

Acknowledgments

Biosis Research acknowledges the contribution of the following people and organisations in preparing this report:

- Robyn Mullens, Robert Green, Martin Zweep (Heritage Victoria)
- Mike Ryan (VicTrack)
- Warren Doubleday ((Melbourne Tram Museum @ Hawthorn Depot))
- Mal Rowe (Trams Down Under)
- Norm Maddock (Melbourne Tramway Museum)

Abbreviations

AHC	Australian Heritage Commission
DOI	Department of Infrastructure
DPCD	Department for Planning and Community Development
DSE	Department of Sustainability and Environment (formerly DNRE)
FNPTT	Fitzroy, Northcote & Preston Tramway Trust
FTT	Footscray Tramway Trust
HO	Heritage Overlay
HTT	Hawthorn Tramway Trust
HV	Heritage Victoria
ICOMOS	International Council on Monuments and Sites
LCC	Land Conservation Council
MMTB	Melbourne and Metropolitan Tramways Board
MBCTT	Melbourne Brunswick and Coburg Tramway Trust
MET	Metropolitan Transit Authority
MOC	Melbourne Omnibus company
MT&OC	Melbourne Tramway & Omnibus Company
NMETL	North Melbourne Electric Traction and Lighting Co
NT	National Trust
P&MTT	Prahran and Malvern Tramway Trust
RNE	Register of the National Estate
TB	Tramway Board
VHR	Victorian Heritage Register

Contents

SUMMARY	11
1.0 INTRODUCTION	15
1.1 Project Background.....	15
1.2 Aims	15
1.3 Consultation	16
1.3.1 Consultation with Heritage Victoria	16
1.4 Location and Description of the Study Area.....	16
1.5 Authorship.....	16
1.6 Terminology.....	18
2.0 HISTORICAL BACKGROUND Thematic approach	19
2.1 Comparable tram systems in other countries	21
2.2 Socio-Geographic background	23
2.3 Thematic/chronological history.....	25
2.3.1 Origins of trams, overseas development.....	25
2.3.2 Summary of Melbourne's Tramway history	26
3.0 Development of Melbourne's Tramway system (Theme 6.3 Shaping the Suburbs)	34
3.1 Horse drawn omnibuses and trams.....	34
3.2 Steam Tramways.....	39
3.3 Cable Trams.....	40
3.3.1 Melbourne Tramway & Omnibus Company Limited.....	41
3.3.2 Clifton Hill to Northcote & Preston Tramway Company,	48
3.4 Private Municipal tramways.....	53
3.4.1 Box Hill to Doncaster tramway	53
3.4.2 North Melbourne Electric Tramway & Lighting Company Ltd.	56
3.4.3 Prahran and Malvern Tramways Trust.....	61
3.4.4 Hawthorn Tramways Trust	65
3.4.5 Melbourne, Brunswick & Coburg Tramways Trust.....	67
3.4.6 Fitzroy, Northcote & Preston Tramways Trust	71
3.4.7 Footscray Tramways Trust.....	73
3.5 Victorian Railways Tram Lines	76
3.5.1 St Kilda to Brighton Beach 'Electric Street Railway'	76
3.5.2 Sandringham to Black Rock and Beaumaris.....	79
3.6 Tramway Board	81
3.7 Melbourne & Metropolitan Tramways Board (MMTB)	81
3.7.1 Rationalisation and the General Scheme.....	82
3.7.2 New Tramcar designs	87
3.7.3 Wartime and Post War survival	91
3.7.4 Omnibuses	94
3.7.5 Motor traffic and conflicts	96
4.0 Social and recreation (Theme 9.1)	98
4.1 Wartime efforts.....	98

4.2	Industrial relations, Unions and Women	99
4.2.1	Tramway Bands.....	105
4.3	Migrant Experience (Theme 2.6).....	107
4.3.1	Recruitment	107
4.4	Tourism, Recreation and Trams	108
4.4.1	Tourist Services.....	108
4.4.2	Wattle Park	111
4.4.3	Tramway Baths.....	112
4.4.4	St Kilda Kiosk – Luna Park Loop.....	112
4.4.5	Malvern Central Park.....	113
4.5	Art Trams and Trams in Art (Theme 9.4)	113
4.6	Commemoration	117
5.0	personalities	119
5.1	C H James.....	119
5.2	George Duncan	119
5.3	Francis Boardman Clapp	120
5.4	F A McCarty	120
5.5	Thomas Bent	120
5.6	George C Clausen.....	121
5.7	Alexander Cameron	121
5.8	Alan G. Monsborough	122
5.9	Hector Bell	122
5.10	Sir Robert Risson.....	122
5.11	Clarrie O’Shea	123
5.12	Lou Di Gregorio.....	124
6.0	DESCRIPTION OF HISTORICAL ELEMENTS	125
6.1	Tramway technology (Theme 5.2 manufacture)	125
6.1.1	Main layout of the tram system	125
6.2	Rolling Stock, motive power and controllers.....	129
6.2.1	Horse Trams.....	129
6.2.2	Cable Trams.....	130
6.2.3	P&MTT cars.....	131
6.2.4	Victorian Railways Cars	133
6.2.5	HTT trams.....	134
6.2.6	MBCTT trams	134
6.2.7	FNPTT Trams.....	135
6.2.8	NMETL	135
6.2.9	MMTB.....	135
6.2.10	W Class	136
6.2.11	Prototypes (PCC980 and 1041)	137
6.2.12	Z Class	137
6.2.13	A Class	138
6.2.14	B Class	138

6.2.15	C Class	138
6.2.16	D Class	138
6.3	Civil works Power Supply, overhead, switching	139
6.3.1	Cable tram engine houses and cable runs.....	139
6.3.2	Overhead wires	142
6.3.3	Trackwork and points	143
6.3.4	Bridges Cuttings and embankments	144
6.3.5	Passenger Shelters and Safety Zones.....	146
6.3.6	Substations.....	154
6.3.7	Overhead, timing and communication.....	159
6.4	Administration.....	162
6.5	Workshops and repair	164
6.6	Historical Collections	165
6.6.1	Tramway Museum Society of Victoria.....	165
6.6.2	Melbourne Tram Museum @ Hawthorn Depot	166
6.6.3	Malvern Tramway Museum	166
6.6.4	University of Melbourne Archives.....	167
6.6.5	Public Record Office Victoria.....	167
6.6.6	National Film and Sound Archive	167
6.6.7	Bendigo Tramway Museum.....	168
6.6.8	Ballarat Tramway Museum.....	168
6.6.9	Melbourne Tramcar Preservation Association	168
6.6.10	Private collections	168
7.0	CULTURAL HERITAGE SIGNIFICANCE.....	170
7.1	Assessment criteria.....	170
7.2	Comparative Analysis	171
7.3	Statement of Significance for the Melbourne Tramway System.....	173
7.3.1	Statement of Significance for the Melbourne heritage tram fleet.....	175
7.4	Statements of significance for individual places	176
7.4.1	South Yarra cable tram engine house.....	176
7.4.2	Brunswick cable tram engine house	178
7.4.3	Windsor cable tram engine house.....	180
7.4.4	South Melbourne cable tram car shed office.....	181
7.4.5	Brighton Road cable tram car shed and office	182
7.4.6	Clifton Hill cable tram car shed office	183
7.4.7	Sandringham VR tram depot.....	184
7.4.8	Brunswick MMTB tram depot	186
7.4.9	Camberwell MMTB Depot tram shed and administration office.....	188
7.4.10	Kew P&MTT Tram Depot offices tram shed and shops	190
7.4.11	P&MTT tram shelters	192
7.4.12	St Kilda-Brighton Tramway Tram shelter	194
7.4.13	St. Kilda Rd & Commercial Road Tram Shelter	195
7.4.14	St Vincent Plaza Tram Shelter	197
7.4.15	Melbourne and Metropolitan Tramway Board Office.....	199
7.4.16	P&MTT electricity substation.....	201

7.4.17	MMTB electricity substation, 53 Maribyrnong Road, Ascot Vale.	203
7.4.18	MMTB electricity substation 2 Daly Street South Yarra	205
7.4.19	MMTB electricity substation 24 Station Street Camberwell.	207
7.4.20	MMTB electricity substation 214 Queensberry Street Carlton	209
7.4.21	Maribyrnong MMTB tram substation	211
7.4.22	Objects and Collections Significance Assessment	212
8.0	Recommendations.....	213
8.1.1	List of priority places/objects to be added to VHR	213
8.1.2	Places to add to heritage overlays	216
8.1.3	Further studies.....	218
8.1.4	Collection management.....	218
	Bibliography	221
	Appendix 1 List of Tram Related Heritage Places	235
	Appendix 2 List of historic Tramway rolling Stock	236
	Appendix 3 List of Tram Related collections.....	237

Tables

Table 1: Summary of recommendations for heritage listing	13
Table 2: Victorian Historic Themes directly relevant to Melbourne tramways	19
Table 3: Comparable modern tramways in other countries.....	22
Table 4: Summary of operation of Melbourne Tramlines	32
Table 5: Routes and opening dates of Cable Tram lines	44
Table 6: Trams of the PMTT	133
Table 7: Trams of the HTT	134
Table 8: Trams of the MBCTT.....	134

Figures

Figure 1: Summary of recommendations.	14
Figure 2: Melbourne's Tramway Network. (Yarra Trams)	17
Figure 3: Melbourne in the 1880s showing existing radial rail services and fragmented grid of roads.....	24
Figure 4: Model of tram Museum Victoria, probably commissioned and displayed to promote the concept of tramways in Melbourne.	35
Figure 5: Horse drawn tram of the Beaumaris Tramway Company. City of Kingston Historical Website	36
Figure 6: Route of the Sandringham Horse Tramway.....	37
Figure 7: Horse tram at corner of Bell street and Sydney road c1903-16, Coburg Historical Society	37
Figure 8: MT&OC horse tram at Auburn and Riversdale Road depot, circa 1910. Public Record Office Victoria. VPRS12800 P1, H5359.....	38
Figure 9: Zoo Horse Tram c1915 Coburg Historical Society	39
Figure 10: Steam tram, Sorrento Back Beach. Public Record Office Victoria.	40
Figure 11: Early California combination cable car on Clay St line http://www.thisdaytrivia.com/content/cablecar1873.jpg	40
Figure 12: ¼ scale cable tram grip car(Museum Victoria).....	41
Figure 13: Illustration of the operation and route of the Richmond cable tram, issued by the Melbourne Tramway and Omnibus Company, Melbourne, 1885 nla.pic-vn4778584	43
Figure 14: Melbourne Cable Tramway System c1901 (from 'Mind the Curve').....	46
Figure 15: Brunswick Cable Tram Car Shed, Sydney Road, prior to 1938, Moreland Library L7_12	47
Figure 16: Cable tram tracks being removed from Lonsdale Street in February 1962.	47
Figure 17: Fitzroy Northcote and Preston Depot at Preston – Charles Ottery with trowel laying the foundation stone, 16 May 1889. City of Darebin.....	48

Figure 18: Cable tram passing Northcote Town Hall. Photograph TG Beckett (Museum of Victoria).	49
Figure 19: Clifton Hill & Preston cable trams, High Street Thornbury, looking south pre World War I. Darebin Historical Encyclopaedia, note car shed and engine house chimney on left.....	49
Figure 20: Looking south on High Street Rucker's Hill embankment.	50
Figure 21: Clifton Hill Tram Terminus, State Library Victoria H36145/39.....	51
Figure 22: looking towards interchange between Clifton Hill and Northcote cable trams c 1920. Source: PRO VPRS 12800 p3 ADV/0181	52
Figure 23: Northcote engine house, High Street Northcote, under restoration 2010.....	52
Figure 24: Advertising poster for Box Hill-Doncaster tramway, circa 1892-1896. Poster from the FOHTD collection.	54
Figure 25: Doncaster Tower, Thiele, Henry Doncaster-Templestowe Historical Society. DP0056	54
Figure 26: Box Hill and Doncaster Tramway Company tramcar No 2. La Trobe collection, State Library of Victoria.....	55
Figure 27: The first tram driven from the powerhouse to Saltwater River terminus by the Mayoress, photo: Essendon Historical Society.	59
Figure 28: NMETL powerhouse and offices with Saloon motor car No 9 with trailer outside,	60
Figure 29: Robertson & Masters, Caulfield Tramway Estate, Caulfield: to be sold by auction, 8th September, 1888, by Robertson & Masters.1888. MAP RM 3631. Part 2.....	62
Figure 30: Opening of the Prahran and Malvern Tramway at Malvern Depot, 30 May 1911 showing the traffic office building required for the massive expansion of the system (photo City of Stonnington)	63
Figure 31: Logo of the Hawthorn Tramway Trust.....	65
Figure 32: Plan of Kew and Hawthorn horse tram routes	66
Figure 33: Promotional map for Wattle Park line (State Library Victoria)	67
Figure 34: MBCTT No 8 in Sydney Road, near Bell Street. (Coburg Historical Society).....	68
Figure 35: MBCTT construction in Sydney Road. (Coburg Historical Society).....	68
Figure 36: Brunswick-Coburg Tramway opening ceremony, 31 October 1916. (Coburg Historical Society)	69
Figure 37: MBCTT staff photograph 1918. (Coburg Historical Society)	69
Figure 38: MBCTT map of routes. (Source: after Prentice).....	70
Figure 39: FNPTT No 8 East Preston, terminus, 1920. (Darebin Historical Encyclopedia)	71
Figure 40: Tyler Street, East Preston, terminus, circa 1920. (R 176 tramcar) (Darebin Historical Encyclopedia)	72
Figure 41: Old Preston depot, 9 September 2002. W class sliding door cars in store. (David Langley).....	73
Figure 42: Opening of the three Footscray tramlines. (Footscray Historical Society).....	74
Figure 43: Plans of Footscray Tram System (State Library Victoria)	75
Figure 44: Footscray Depot in the 1970s.(Plateshed.com)	76
Figure 45: Terminus of VR Brighton Beach line at St Kilda station Public Record Office Victoria.....	77
Figure 46: St. Kilda Brighton Tramway Map from: The Brighton Electric Line http://www.vicsig.net/index.php?page=trams&section=vr	78
Figure 47: VR tram shelter opposite Kinane St Brighton.....	79
Figure 48: Former Park Street terminus shelter in Brighton Gardens (State Library Victoria H32492/8796).....	79
Figure 49: Route of Beaumaris Tramway, (http://www.vicsig.net/index.php?page=trams&section=vr Marshall-Wood)	80
Figure 50: Melbourne Tramway Board monogram on Clifton Hill Depot	81
Figure 51: General Scheme for Tramways MMTB 1922, (Running Journal Volume 10, Number 1 February 1973)	84
Figure 52: Melbourne's Tramways c1938 showing conversions of cable trams to electric.	85
Figure 53: Plan of Melbourne Tramways c1940.....	86
Figure 54: Trams on Swanston Street 1947. Public Record Office Victoria.	86
Figure 55 P&MTT No 44 showing drop-centre three entrance configuration which influenced the original W Class.....	87
Figure 56 "L" class tram 101, (in later MMTB livery) one of six built for the P&MTT and the predecessor to the W. W1 and W2 http://www.myweb.net.au/mottram/trams/nonstd/NONSTD.HTM	87

Figure 57 W1 No 4231, with open sides in original brown and cream MMTB colours.(http://www.myweb.net.au/mottram/trams/moomba2000/moomba2000.htm)	88
Figure 58W 2s and 5s in 1970s showing advertising panels http://www.stampboards.com/viewtopic.php?f=10&t=10448	89
Figure 59: Camberwell Tram Depot.1925 (Boroondara Library LHPH 551	90
Figure 60: Track layout at North Fitzroy Depot (VicSig)	92
Figure 61: Tram side of North Fitzroy Depot.....	92
Figure 62: Model for proposed underground tram route beneath Swanston and Bourke Streets (Destination City 4 th ed.)	93
Figure 63: St Kilda Junction, 30 August 1969. Photograph courtesy Mal Rowe.	93
Figure 64: MMTB Bus and W Class tram 1974 – showing uniform green and cream livery	96
Figure 65: Port Melbourne Bus Depot. (MMTB Annual Report)	96
Figure 66: promotional flyer for MMTB excursion bus (Warren Doubleday)	97
Figure 67: Honour board from MMTB Head Office (Malvern Tramway Museum)	98
Figure 68: Banner - Australian Railways Union, Victorian Branch, c 1911, (Museum Victoria Reg. No: HT 1115).....	100
Figure 69: Banner - Australian Tramway Employees Association, Victorian Branch, 1916 (Museum Victoria Reg. No: HT 10044)	100
Figure 70: ATEA members of the ESCo with union banner c 1914 depicting P&MTT C class No 30 tram.(Warren Doubleday)	101
Figure 71: Conductress changing the destination sign on VR tram, St Kilda to Brighton route (State Library of Victoria)	102
Figure 72: Structure of Public Transport Unions.	103
Figure 73: Union badges in BTM Collection, btm1947 and btm1947 (Warren Doubleday)	104
Figure 74: Ms Julie Di-Mieri makes her protest on board a tram in the Bourke Street Mall during a public transport stop work, Dec 5, 1989. (Photo: Stuart Hannigan).....	104
Figure 75: For 33 days from January 1, 1990, 250 trams were parked in Melbourne's CBD streets by striking tram drivers. (Photo: John Lamb)	105
Figure 76: Australian Rail, Tram and Bus Industry Union Banner during 1990 tram strike.	105
Figure 77: Coburg Tramway Band c. 1920 (http://www.ibew.org.uk/vbbp-oz.htm)	106
Figure 78: Malvern Tramway Band c1915, (http://www.ibew.org.uk/vbbp-oz.htm)	106
Figure 79: Recruitment tram float during World War 1 (State Library Victoria)	108
Figure 80: Promotional poster for tourist tram service (courtesy Warren Doubleday).....	109
Figure 81: Promotional Map for recreations tram journeys	110
Figure 82: Meet them at the Zoo - take electric tram at William St. Vernon Jones. Vernon Jones. [ca. 1930 - ca. 1939] State Library of Victoria, Accession No: H2007.115/13)	111
Figure 83: Wattle Park chalet, newly constructed. (MMTB official photograph)	112
Figure 84: Central Park Kiosk, c1912, (State Library H86.98/272)	113
Figure 85: Mirka Mora's tram	114
Figure 86: History of Transport Mural.	116
Figure 87: Images of Trams on Parade, Mooma 2001.....	117
Figure 88: George Smith Duncan, 1852-1930, chief engineer Melbourne Tramways Trust, Melbourne, c.1880.....	119
Figure 89: Francis Boardman Clapp,1833-1920.	120
Figure 90L George C Clauscen	121
Figure 91: Major-General R.J.H. Risson. Australian Army.....	122
Figure 92: Chairmen of the MMTB 1919-70, Running Journal 6 no 3 Dec 1969.	123
Figure 93: Clarrie O'Shea, State Library Victoria Image Number: hp004050 The Herald & Weekly Times Limited.	123
Figure 94: Clay Lucas The Age November 13, 2010. Photo: Vince Caligiuri	124
Figure 95: Cable tram slot and track at western end of Bourke Street c 1988.....	126
Figure 96: Melbourne's Tramways at greatest extent of cable lines & prior to the formation of MMTB.....	127
Figure 97: Melbourne's Tramways at its present extent.....	128
Figure 98 Melbourne Tramway and Omnibus Co Ltd. Tramcar model from Melbourne Centennial Exhibition – 1888, exhibit No. 1152	130
Figure 99: Cable Tram Grip mechanism	131
Figure 100: Dandenong Road combination car blueprint.....	132

Figure 101: Profiles of trams in current operational fleet (Makers drawings from http://www.vicsig.net/index.php?page=trams&section=rollingstock).....	139
Figure 102: Interior of Richmond Cable Tram Engine House c1888 (image Picture Victoria).....	140
Figure 103: Fredrick S. Smith in either the Gertrude Street or St Kilda Road engine house of the Melbourne Tram and Omnibus Company.....	140
Figure 104: Cable Tram system at greatest extent from about 1891.(McCarty 1984 p.18).....	141
Figure 105: Decorative tram poles in Fitzroy St. (http://clubtroppo.com.au/2008/02/16/liveability/)	142
Figure 106: Overhead wires at Grand Union Junction, Balaclava after it was rewired to get rid of frog pans.	143
Figure 107: characteristic early tram pole final.....	143
Figure 108: Tram track crossover fabricated at Chas Ruwolt Pty Ltd, Richmond, Museum Victoria image MM 011937	144
Figure 109: Miller Street tram bridge over railway near Preston Depot. Darebin Historical Encyclopedia	144
Figure 110: Mock-up tram crossing Miller St Bridge in the Film 'Malcolm'	145
Figure 111: Old Maribyrnong river Tram Bridge (photo Warren Doubleday).....	146
Figure 112: Waiting shed on left of VR tram 33. Brighton Beach, http://www.victorianrailways.net/photogallery/suburb/gal04/bbeachtram.html	146
Figure 113: Swanston Street safety zone (the Argus 3 June 1926 p.9)	148
Figure 114: The Argus Sat 7 July 1928 p.23; 31 July 1929 p.5	149
Figure 115: The Argus 4/3/1925 p.19, showing tram safety zone.	149
Figure 116: Raised platform and ubiquitous curve ended steel pipe hand rails in 1960s.....	150
Figure 117: Current form of yellow-painted concrete 'prow' safety zone protection, and	150
Figure 118: Standard pattern MMTB waiting shelter.....	151
Figure 119: Swanston St Signal box and shelter.	152
Figure 120: Elizabeth Street in c1900 (SLB H3171) and in 2009 (southernthunderer.com.au)	153
Figure 121: Artists impression of proposed Melbourne Uni terminus http://www.yarratrams.com.au/desktopdefault.aspx/tabid-105/99_read-350/	153
Figure 122: Rotary Converter at Hawthorn Tram Depot (Museum Victoria Reg. No: MM 004054)	154
Figure 123: Mercury Arch rectifier in Preston Substation (photo Robert Green).....	155
Figure 124: List of substations in use 1984 (copy provided by Robert Green).....	155
Figure 125: Carlton substation on Bouverie and Queensberry Streets	156
Figure 126: Carlton, Central Control room 1930s	157
Figure 127: Carlton Central Control room MMTB News 1.4. Nov-Dec1964.....	157
Figure 128: Melbourne tramway substations and connections in 1984 (copy provided by Robert Green)	158
Figure 129: MMTB electric control cabinets on Lonsdale Street.....	159
Figure 130: Preston and Malvern Tramway Trust electric control cabinets at Malvern tram museum – noet similarity to MMTB style.....	160
Figure 131: Bundy Clock in South Melbourne? (Source State Library Victoria) and example at Malvern tram museum.....	161
Figure 132: Clock at former terminus.....	161
Figure 133: Melbourne Tramway And Omnibus Co Office 669 Bourke St (Photo National Trust Vic)	162
Figure 134 MMTB Traffic Office on Victoria Parade.....	163
Figure 135: MMTB Head Office, 616 Little Collins Street, 1937. (MMTB photograph State Library & Google Street view).....	163
Figure 136: cable trams in temporary storage at Nicholson Street Depot during conversion of tramlines to electricity Holden Street workshops c1940 (running Journal.....	164
Figure 137: Track plan of Presto Workshops.....	165
Figure 138: Fort Macquarie tram depot(Wikimedia commons)	172
Figure 139: City Tram Depot Angus St Adelaide- demolished 2006	172
Figure 140: MMTB ticket machine from Melbourne Museum collection.....	212
Figure 141: Victoria Parade and Brunswick St Cable Tram Engine House during demolition 2009. http://indolentdandy.net/fitzroyalty/2009/12/09/a-facade-of-heritage-values/	235

SUMMARY

Biosis Research Pty. Ltd. was commissioned by Heritage Victoria to undertake a heritage study of Melbourne's tramway system, including a thematic history, identification of buildings, structures, moveable objects (including rolling stock) and archives, assessment of significance of places, components and networks and recommendations for statutory protection. Victoria.

Melbourne's tramways are a network of standard gauge tracks, powered by overhead wires at 600 volts DC. The infrastructure and rolling stock is owned by the Victorian Government and operated under contract. The current private operator is KDR Melbourne, operating as Yarra Trams. Ticketing, public information provision and patronage promotion are undertaken by Melbourne's Government-owned multi-modal service provider, Metlink.

Melbourne's tramway system is fundamentally a modern network both in its infrastructure and rolling stock. However it retains a legacy of over 130 years of history and development, with a series of historic tram depot, substation and other buildings and a collection of operating, mothballed and museum curated historic trams.

This assessment has identified the remaining elements of the Melbourne cable tramways, and the existing electric tram system as having cultural heritage as 'systems'. That is, the overall system is of significance as well as the individual components such as tram depots, offices, individual fabric elements such as overhead wire tram poles, tram shelters and other structures, tram cars and other rolling stock, museum objects and collections, and historic documents, photos and archives. This system or network has been considered in terms of the historic role and connections made by the tram routes and their operation to Melbourne's historical, social and economic development.

While a nomination of the system to the heritage register, or a combined inclusion on the various council Heritage Overlays, would be the logical outcome for management of the heritage values of the system, this may be problematic in terms of administration and legal definition. Therefore, while this is the ultimate recommendation of the study, it is also recommended that the following individual places are included on the Victorian Heritage Register, and or relevant planning scheme overlays.

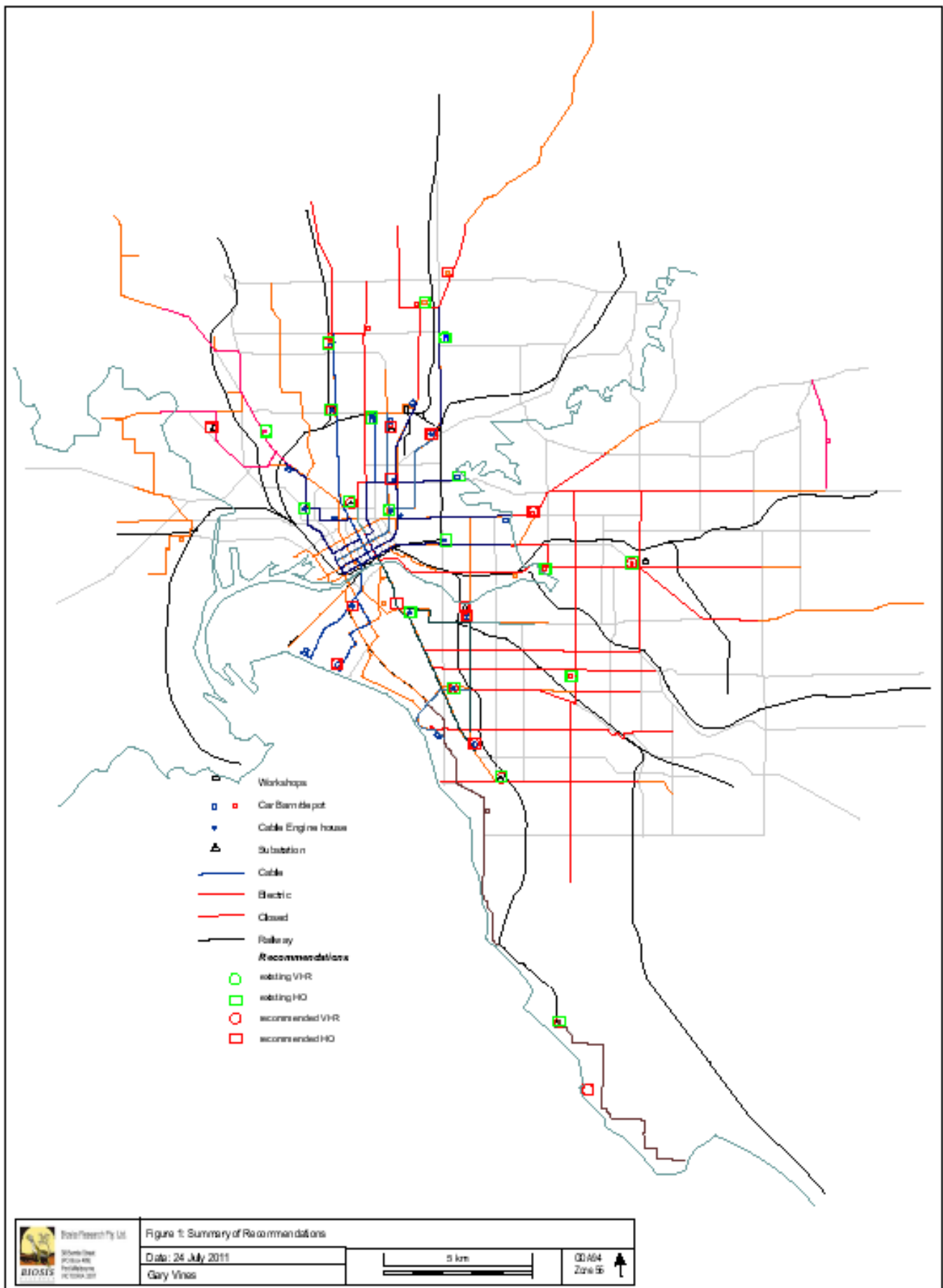
Place	Proposed listing	
	VHR	HO
<i>Cable tram places</i>		
South Yarra Cable Tram Engine House 241-257 Toorak Road and car shed 625 Chapel Street South Yarra. 1887	X	X
Brunswick Road Cable Tram Engine House and substation, 253-263 Brunswick Road, Brunswick, 1888	X	
Windsor Cable Tram Engine House, 105 Wellington Street St. Kilda, 1891	X	
South Melbourne Cable Tram Car Shed and office, 176-178 Victoria Avenue, Albert Park, 1890-1918	X	X
Brighton Road Cable Tram Car Shed and office, 16 Brighton Rd & 2 Brunning Street Balaclava, 1888 – 1918	X	X
Clifton Hill Cable Tram Car Shed office, 480-484 Queens Parade & 266-284 McKean Street, Fitzroy North, 1887	X	X
South Melbourne Cable Tram Engine house façade, 357-361 City Road South Melbourne		X
Johnston Street Cable Tram Engine house façade, 95-103 Johnston Street & 56 Argyle Street Fitzroy		X

Place	Proposed listing	
	VHR	HO
<i>Electric Tram Places</i>		
Sandringham VR Tram Depot, Station Street & Bay Road (railway yard) Sandringham, 1919	X	X
Brunswick MMTB Tram Depot, Sydney Road Moreland, 1936	X	
Kew Tram Depot Cotham Road Kew, 1915	X	X
Camberwell (East Hawthorn) Tram Depot, 160-170 Camberwell Road administration office 8 Council St Camberwell/Hawthorn East, 1929	X	
East Preston Tram Depot, Plenty Road East Preston 1955		X
North Fitzroy Tram Depot and workshops, Nicholson Street North Fitzroy 1888/1955		X
Domain Interchange, St Kilda Road South Melbourne		X
Tram Shelter, St. Kilda Rd & Commercial Rd. NE corner, Melbourne, 1915 – reconstructed 2001	X	X
St Vincent Plaza Tram Shelter, Victoria Parade, cnr. Brunswick St (St Vincent Plaza), Melbourne	X	X
Hawthorn Tramway Trust shelter, Riversdale Road, outside Camberwell Tram Depot, East Hawthorn	X	X
Hawthorn Tramway Trust shelter, Riversdale Road, S.E. cnr Highfield Street, Camberwell	X	X
Hawthorn Tramway Trust shelter, Camberwell Road, Fordham Gardens, Camberwell	X	X
Hawthorn Tramway Trust shelter, Camberwell Road, S.W. cnr. Bowen Street, Camberwell City of Boroondara	X	X
Green Point tram shelter, Esplanade Brighton	X	
Tram Shelter, Beach road near Kinane St, Brighton, 1906 (City of Bayside Planning Scheme)		X
P&MTT Substation, 4-6 Rusden Street, Elsternwick	X	
MMTB Substation, 214 Queensberry Street cnr. Bouverie &, Carlton	X	X
MMTB Substation, Maribyrnong road, Ascot Vale, 1925	X	X
MMTB Substation, 30 Station Street, Camberwell	X	X
MMTB Substation, (Brunswick Rd and Black St., Brunswick, in part of former cable tram engine house), 1925	X (with engine house)	
MMTB Substation, 2 Daly Street, South Yarra, 1927	X	X
MMTB Substation, Queens Parade, Clifton Hill 1955.		X
High Street rail over bridge, High Street, Clifton Hill, 1924		X
Zoo line rail over tram bridge, Off Poplar Ave, Parkville		X
Melbourne and Metropolitan Tramway Board Offices, 616 Little Collins Street (at rear of former MT&OC building Bourke St.), Melbourne, 1937	X	X
<i>Rolling stock</i>		
<i>Cable Trams</i>		
MT&OC No 1, Single truck cable tram dummy car, 1885. John Stephenson & Co., New York, Museum Victoria – donated to science museum 1940	X	
MT&OC No. 28 Single truck cable tram dummy car, TMSV Bylands, on loan to Melbourne Tram Museum @ Hawthorn Depot.	X	
MT&OC No. 436, Single truck cable tram dummy car, TMSV Bylands, privately preserved by Mr A. E. Twentyman.	X	
MT&OC No. 256, Single truck cable tram trailer saloon car, TMSV Bylands	X	
MT&OC No. 290, Single truck cable tram trailer saloon car standard eight window TMSV Bylands	X	
<i>Electric Trams</i> - Heritage Fleet at Melbourne Tram Museum & Hawthorn Depot proposed for group classification including the following		
PMTT 84	X	
PMTT 16	X	

Place	Proposed listing	
	VHR	HO
PMTT 35	X	
PMTT 46	X	
P&MTT 36	X	
HTT 1	X	
HTT 8	X	
HTT 16	X	
MMTB L 104	X	
MMTB W 220	X	
MMTB W 380	X	
MMTB W1 431	X	
MMTB Z1 108	X	
<i>Painted Trams</i> - Further investigation to determine survival and condition of the following painted trams and inclusion on Heritage Register if appropriate		
W2 504 Clifton Pugh		
W 384 Howard Arkley		
W 243, Mirka Mora		
<i>Models</i> – consideration of inclusion of VHR		
Melbourne Tram and Omnibus Co Models	X	
Tram model in State Library Victoria Collection	X	

Table 1: Summary of recommendations for heritage listing

Figure 1: Summary of recommendations.



1.0 INTRODUCTION

Cultural heritage legislation protecting historical heritage places applies in Victoria (*Heritage Act* 1995). These places are an important part of our heritage as they can provide us with important information about past lifestyles and cultural change. Preserving and enhancing these important and non-renewable resources is encouraged under various Government legislation and policies.

1.1 Project Background

Biosis Research Pty. Ltd. was commissioned by Heritage Victoria to undertake the Melbourne Metropolitan Tramway Heritage Study, Victoria. This study is intended to document tramway heritage places, objects and collections within metropolitan Melbourne, identify and make recommendations of the levels of significance of heritage places for possible inclusion on the Victorian Heritage Register (VHR), Heritage Overlay (HO) and/or Victorian Heritage Inventory (VHI). The need for this study was identified because of the ad hoc approach of the past two decades to recognition of the significance of Tramway heritage.

1.2 Aims

The aim of this assessment is to establish the cultural heritage values of the buildings, structures, landscape elements, infrastructure, moveable objects, collections and archives relating to Melbourne's Metropolitan Tramway systems. The study also aims to clarify the extent and nature of the tramway system, and provide a comprehensive overview of the tramway systems that developed using the following methods of motive power:

- Horse drawn (late 1880s – 1914)
- Underground cable (1885 – 1940)
- Overhead electric (1906 – present day)

The tasks include:

- Consultation with Heritage Victoria, VicTrack and other stakeholders;
- Review of existing documentation to prepare a comprehensive thematic history of the tramway systems that developed in Melbourne in reference to Victoria's Framework of Historical Themes;
- Provide a methodological statement on how significance levels have been determined;
- Assess the level of significance for places and objects identified in the project
- Provide brief statements of cultural heritage significance for places and objects of potential State significance;
- Provide photographs of places and objects and where possible map the location
- Provide recommendations for inclusions on the Heritage Overlay and the Victorian heritage Inventory.

- Enter data into Heritage Victoria's HERMES database.
- Assess significance of and provide details of relevant collections; and
- Identify priority places to be added to the VHR and recommend further studies and other activities to advocate, enhance and protect tram heritage.

1.3 Consultation

1.3.1 Consultation with Heritage Victoria

Before undertaking surveys for historical heritage places there is a statutory requirement to notify Heritage Victoria – the State government agency responsible for historical cultural heritage places. In the present study, the site inspection was intended to help identify standing structures and engineering works, and so was not considered archaeological in nature.

A steering committee in the form of an informal working group comprising the consultant, Robyn Mullens, and Robert Green of Heritage Victoria, Mike Ryan from VicTrack, and Warren Doubleday from the Tramway Museum Society, met periodically at the initial stages of the project and following site recording, to consider options for the extent of designation and form of the assessment. Further discussions with other tramway researchers and collectors were also undertaken either through the 'tramways down under' email discussion group, or in person, such as with Mal Rowe the administrator of this list and Norm Maddock of the Malvern Tramway Museum.

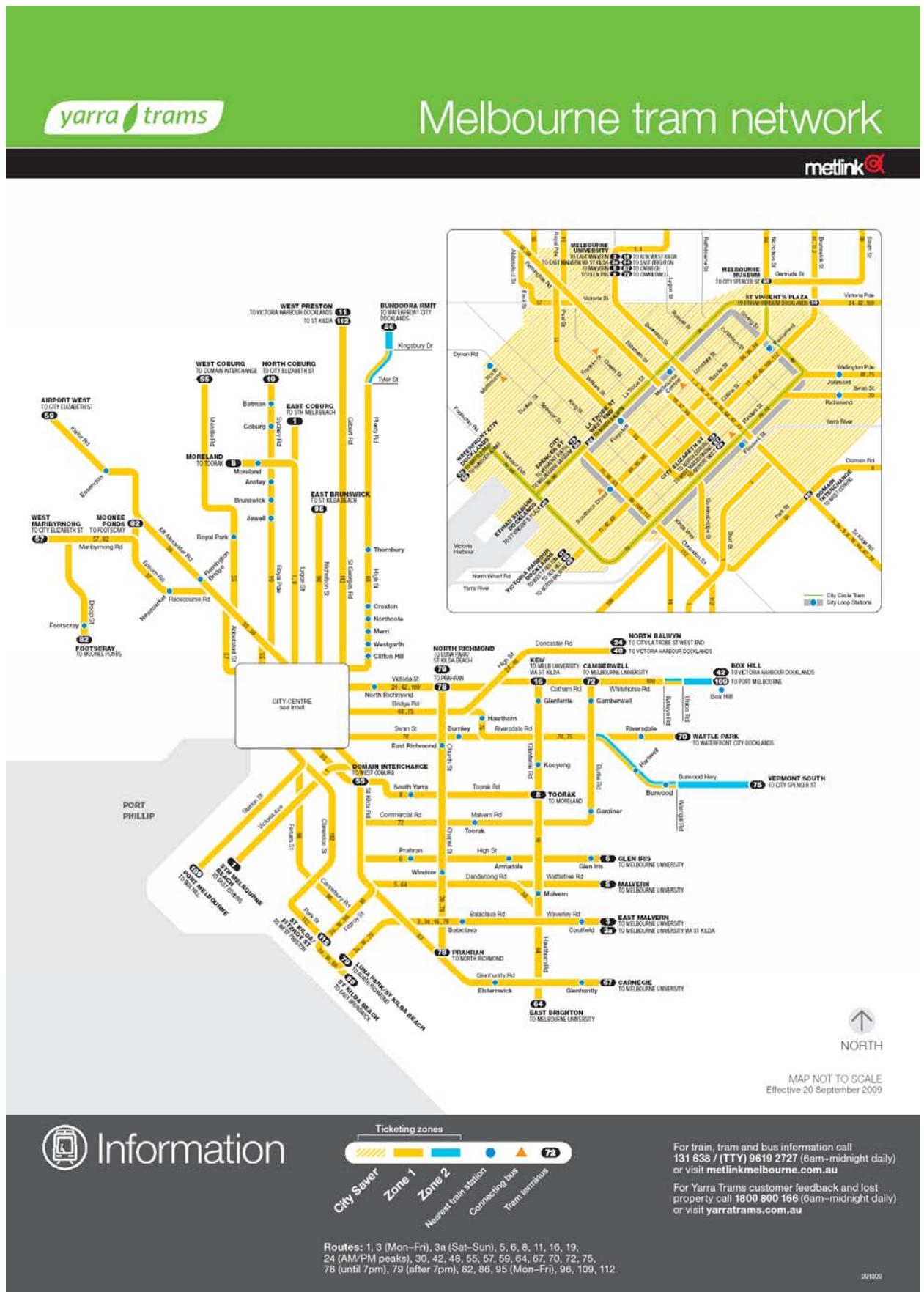
1.4 Location and Description of the Study Area

The location of the Study Area includes all of the past and present tramway system in Melbourne. In practice, this extended from Yarraville in the west to Bundoora in the north, Burwood in the east and Sandringham in the south although this extent was not achieved at any single point in time. The area covered by the study is shown in Figure 2.

1.5 Authorship

Gary Vines managed the project, carried out the field survey and wrote the report. Paul Young compiled all the figures.

Figure 2: Melbourne's Tramway Network. (Yarra Trams)



1.6 Terminology

The conservation terminology used in this report is of a specific nature, defined in the *Australia ICOMOS Charter for the Conservation of Places of Cultural Significance* (the Burra Charter) as endorsed by the Australian Heritage Commission. The terms most frequently referred to are: place, cultural significance, fabric, conservation, preservation, restoration, reconstruction and adaptation.¹ These terms are defined in the charter as follows:

Place means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.

Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the *place* itself, its *fabric*, *setting*, *use*, *associations*, *meanings*, records, *related places* and *related objects*.

Fabric means all the physical material of the *place* including components, fixtures, contents and objects.

Conservation means all the processes of looking after a *place* so as to retain its *cultural significance*.

Maintenance means the continuous protective care of the *fabric* and *setting* of a *place*, and is to be distinguished from repair. Repair involves *restoration* or *reconstruction*.

Preservation means maintaining the *fabric* of a *place* in its existing state by removing accretions or by reassembling existing components without the introduction of new material.

Restoration means returning the existing *fabric* a *place* to a known earlier state and is distinguished from restoration by the introduction of new material into the fabric.

Reconstruction means returning a *place* to a known earlier state and is distinguished from *restoration* by the introduction of new material into the *fabric*.

Adaptation means modifying a *place* to suit the existing use or a proposed use.

Use means the functions of a *place*, as well as the activities and practices that may occur at the *place*.

Compatible use means a *use* which respects the *cultural significance* of a *place*. Such a use involves no, or minimal, impact on cultural significance.

Setting means the area around a *place*, which may include the visual catchment.

Related place means a *place* that contributes to the *cultural significance* of another *place*.

Related object means an object that contributes to the *cultural significance* of a *place* but is not at the *place*.

Associations mean the special connections that exist between people and a *place*.

Meanings denote what a *place* signifies, indicates, evokes or expresses.

Interpretation means all the ways of presenting the *cultural significance* of a *place*.

¹ Australia ICOMOS, The Burra Charter (The Australia ICOMOS charter for places of cultural significance)

2.0 HISTORICAL BACKGROUND THEMATIC APPROACH

Victoria's Framework of Historical Themes² is a useful '*aide-mémoire*', for investigating the many complex layers of Victoria's History. In terms of Melbourne's tramways, there are several relevant themes, but only one of primary concern –

3.5 'Travelling by Tram'

Heritage Victoria *Framework of Historical Themes* includes a number of examples under this sub-theme, which while not exhaustive, provides a suitable starting point for analysis of the historical themes pertinent to the Melbourne Metropolitan Tram system. The *Framework of Historical Themes* includes:

Prompts (list is not exhaustive),	Examples of places and objects
Early private systems including horse-drawn routes, cable trams and early electric systems	Cable tram engine house e.g., North Melbourne and North Carlton Bendigo Tram Shed complex
Creating municipal networks and electrifying tram systems	Tram depots – Hawthorn, Malvern Ornamental tramway poles in Dandenong Road Tram shelters
Expanding the network – Melbourne and Metropolitan Tramways Board	Preston Tramway Workshop Ornamental tramway poles in Peel Street, Fitzroy Street and Victoria Parade Wattle Park (originally established by Hawthorn Tramways Trust, it was developed by the MMTB)
Building and servicing the trams	Preston Tramway Workshop
Celebrating trams as icons	Early trams Tram technology and ephemera Conductors' bags, uniforms

Table 2: Victorian Historic Themes directly relevant to Melbourne tramways

The other themes that are relevant in some respects are as follows:

6.3 Shaping the suburbs - Melbourne's tramway system was of primary importance in assisting the development of low density residential suburbs allowing the segregation of work and family, and the creation of a commuter class. While parts of the system were created to serve existing established settlement, many individual routes or extensions were built to serve expanding

² Heritage Victoria, 2010, Victoria's Framework of Historical Themes, Published by the Heritage Council of Victoria, Melbourne, February 2010. Also published at www.heritage.vic.gov.au

suburban development, sometimes in advance of the actual building of the suburbs, and as a means of promoting development.

5.2 Developing a manufacturing capacity – the local fabrication of tram infrastructure, tracks, overhead systems, power supply controllers, and of course rolling stock, is a significant part of the tramways history. The critical indicator for this theme is the evidence of manufacture, whether of rolling stock, where the Preston Workshops figure prominently, or of infrastructure, where both the former MMTB, and private companies can be identified. Indirectly, trams served industry and commerce by providing the commuter transport – bringing the workers to the workplace.

While many of the other themes relating to living and working in the city are indirectly related because the tramway served as the link between people and places, only some can be considered to have sufficient connection to the tramways to warrant discussion in the context of the system's on-going cultural heritage values.

9.1 Participating in sport and recreation – many tram routes served mass recreation, such as sea-bathing, sporting events and the like, including areas such as Wattle Park which were purchased and developed by the tramways specifically to create an off-peak recreational traffic, but also as part of a perceived civic responsibility.

5.7 Catering for tourists – allied to recreation, the tram system has served both local and foreign tourists, both as an iconic tourist attraction in itself and as a means of getting to destinations. Some specific routes connected tourist destinations such as St Kilda while at least from the later 20th century, the trams became a feature of tourism promotion for Melbourne, and most recently trams have been tourist destinations in their own right, such as the heritage fleet on display at the Melbourne Tram Museum @ Hawthorn Depot, the City Circle service and the Restaurant Trams.

2.6 Maintaining distinctive cultures – the tramways were seen as a natural employer of 'New Australians' and provided opportunities for many migrants, and so developed a distinctive multicultural character in post war years.

9.4 Creating popular culture, and

9.3 Achieving distinction in the arts – the tramways have been both the subject of and venue or artistic and cultural endeavour.

7.5 Protecting Victoria's Heritage – as a recent and still active heritage issue, the tramways, and in particular the surviving and redundant W class tram fleet is the subject of heritage conservation and public campaigning.

One of the drawbacks of the thematic approach is that a great deal of data on the details of planning, financing, constructing and operating the tramways, the technology, personalities and social history, are not readily captured where the place in question is strongly related to a single theme. Therefore a combination of a chronological and thematic approach sometimes provides for a richer and more comprehensive historical approach. There is a plethora of detailed historical information on Melbourne's tramways and trams, thanks in no small part to the battalions of enthusiastic amateur historians, collectors and restorers.

However, this study cannot do justice to this wealth of information, and has by necessity had to cull heavily from the available sources to provide a skeleton historical account, focussing on

aspects of tramways which might help address issues of cultural significance. Therefore this history interweaves the thematic approach with a more traditional chronological history.

2.1 Comparable tram systems in other countries

The extent or size of the Melbourne tramway system is to some extent relevant to determining its significance, although this should perhaps be considered in relative terms, i.e. in relation to the size of the population or area of the city it serves, as well as the period of development.

Melbourne it is claimed, has either “the largest tram network in the world”³ “the third largest tram system in the world”⁴ or “one of the biggest systems in the world”⁵ with 249 kilometres of double track with 494 trams available for regular services. According to Jane's Urban Transport Systems, Melbourne's tramway system is the 10th largest by length of track, and 3rd largest by number of routes or lines.⁶ This is not a straightforward measure, as the following statistics on other tramways around the world might demonstrate.

City	Population	City area	Total length or tramways (kms.)	Number of vehicles	Age of system	References
Amsterdam			81	236		2007 http://www.gvb.nl/english/aboutgvb/facts-and-figures/Pages/facts-and-figures.aspx
Belgrave			127.3	150	1892	Wikipedia
Berlin			188			http://www.bvg.de/index.php/en/17106/name/Tram.html
Bucharest			143	506		http://www.ratb.ro/index.php?page=stats_cat
Budapest			153	911		2008 Wikipedia
Melbourne	4 million	8,806 km ²	245	578 (inc. 38 W class)	1888 (cable) 1906 (electric)	http://www.yarratrams.com.au/desktopdefault.aspx/tabid-47//74_read-117/
Milan	4.3 million	2,370 km ²	286.8 track	400+	1881 (horse) 1893 (electric)	http://www.lrta.info/articles/art0503.html - n.b. inc 1930s Peter Witt bogie cars
Moscow	10 million	1,081 km ²	444 route		1870s (horse) 1899 (electric)	http://tram.ruz.net/routes/routes.htm http://www.moscow.info/essentials/trams.aspx
Prague	1.3 million		144	968	1875	Wikipedia 2011
Saint Petersburg			228	791		2008 http://citybus.cz/praha/aktevid_dp-ed/index.htm (Russian)
Silesian	2 million		342	371	1894	Trams & Interurbans in Silesia & Dabrowa Region - NB this is more an interurban rail system.

³ "Investing in Transport" Victorian Department of Transport. pp. 69.

http://210.15.220.118/east_west_report/Investing_in_Transport_East_West-Chapter03.pdf. Retrieved 2010-11-22.

⁴ Yarra Trams http://www.yarratrams.com.au/desktopdefault.aspx/tabid-159//37_read-116/ *An edited extract from "A Brief Timeline of the History of Tram operation within Victoria", November 1999. Compiled by Mr Hugh Waldron, Senior Driver, Malvern Depot.*

⁵ Victorian Tram Systems, <http://www.vicsig.net/index.php?page=trams>

⁶ The Age, Monday 16 January 1995. Note however, that since 1995 the St Petersburg network has been greatly reduced to less than 280 km

City	Population	City area	Total length or tramways (kms.)	Number of vehicles	Age of system	References
Interurbans						http://historia.arch.p.lodz.pl/jw37/urbtr/sl-dabr-inurb.html
Sofia	1.2 million	492 km ²	308, mostly single track	190	1901	http://www.skgt-bg.com/History/Tram_en.htm
St Petersburg	4.8 million	605.8 km ²	C 280, previously 678	950	1863 horse 1907 electric	Jane's Urban Transport Systems
Toronto	5.5 million	7,124 km ²	305.8 route 156 double track	248	1861 (horse) 1894 (electric)	Wikipedia 2008 http://www3.ttc.ca/About_the_TTC/Operating_Statistics/2008.jsp
Vienna	1.7 million	414.9 km ²	179	556 or 799	1863 (horse) 1883 (steam) 1897 (electric)	Wikipedia claims this is the third largest in the world http://world.nycsubway.org/eu/at/vienna.html 2008; http://www.wien.gv.at/english/politics/statistics/pdf/public-transport.pdf
Zagreb			142	240	1891 (horse) 1902 (electric)	Wikipedia
Zurich:	0.4 million	91.88 km ²	79	317	1882	2008 http://www.stadt-zuerich.ch/vbz/de/index/service/bookmark.html http://www.proaktiva.ch/tram/zurich/fleet.html#motormain

Table 3: Comparable modern tramways in other countries.

While Melbourne is the only state capital which retains a comprehensive tramway network, several other Australian cities once had extensive systems. One measure of the size of the system is the number of depots, Sydney once had 15 tramway depots, Adelaide 4, Newcastle and Brisbane 3, Hobart 2 and Ballarat, Bendigo, Geelong, Launceston, Perth, Kalgoorlie and Fremantle one each.⁷ Melbourne had a maximum of 14 tram depots in the heyday of the mid 1950's, and currently has eight operational depots (Essendon, Brunswick, Camberwell, East Preston, Kew, Southbank, Malvern, Glen Huntly), one redundant depot (Hawthorn) and another only used for busses and the privately operated trams (North Fitzroy). The former Footscray, Thornbury, East Coburg, and Hanna St South Melbourne depots have been mostly demolished as have the former Victorian Railways tram depots at Elwood and Sandringham.

Another aspect of Melbourne's tramway heritage that should be considered is how the system has retained its historical character, both in terms of public perception and more objective significance criteria. There is clearly a continuing public appreciation of Melbourne's Trams as part of the historic fabric and heritage of the city with the W class trams considered the icon or symbol of Melbourne at least in tourism promotion. However, the reality may be that the system is now predominantly a modern one, both in fabric (90% of rolling stock and infrastructure is relatively recent) and operation (single operator (driver rather than driver and conductor), automatic ticketed and computer controlled).

⁷ List of Electric Tramway Depots in Australia, compiled by Robert Green c 1996 (copy provided by R Green.)

The historical elements are confined to the few vintage trams still operating, the large collections of stored rolling stock and other artefacts, surviving heritage buildings and some public memory of the former staff roles and appearance such as conductors. These elements may provide a sense of continuity with the past, and for a large proportion of Melbourne's residents are still a memory, but with passage of time, will diminish into history, rather than being part of a contemporary cultural identity.

It might be considered that there are two tram systems – a modern city-wide network providing functional needs, and a separate 'heritage component' as scattered elements, museum collections, historic buildings and the discrete set of the mostly redundant W class 'heritage' fleet and specialty operations such as the city Circle and Restaurant Tram.

2.2 Socio-Geographic background

Melbourne's topography and geography have partly influenced transport development in the City and in turn affected the way the city has grown socially, economically and culturally. Melbourne is generally flat to undulating, dissected by rivers and streams, but these generally radiate from Melbourne, so communication along ridgelines minimises the need for bridges. Some swamps and steep hills hindered roads and development, such as the extensive swamps west of the city which inhibited tram development and interconnectivity to the western suburbs, a few steep slopes which required engineering solutions such as the incline up Rucker's Hill or the Barkers Road Cutting and the presence of two large rivers, the Yarra and Maribyrnong, which created obstacles and forced transport into bottlenecks at the available crossings. The focus of tramways along St Kilda Road into the city at Swanston Street is a major example of this.

Melbourne's climate is generally milder than many European and American cities, and so probably more conducive to travel. Open sided trams, which were also common in overseas use, were well accepted up to the 1930s – people probably responded to the cold by rugging up.⁸ While extreme weather such as frost or snow has not been an issue for Melbourne trams, the usual weather related factors such as heavy rain leading to flooding and wet tracks has influenced some design elements, such as sand assisted brakes, track drainage and cleaning and formation of road surfaces.

Melbourne's tram system should also be viewed in the context of the rapidly expanding city, both in terms of population and area. The various tram lines were each conceived in the mid to late nineteenth century in response to a rapidly growing population, funded by wealth created in the gold rushes and subsequent real estate and industrial booms, and made necessary by rapidly declining environmental and health conditions.

By the 1880s, Melbourne was a sizeable city, probably the largest in the Southern Hemisphere and larger than most European capitals. In just a decade the population had doubled, reaching half-a-million. Office buildings reached up to 12 storeys high and rivalled those of New York, London and Chicago. Prominent and architecturally extravagant banks, hotels and coffee palaces were erected in the city, and houses on larger blocks spreading out on the fringe.⁹

⁸ John D. Keating *Mind the curve! a history of the cable trams*

⁹ Lionel Frost, *The New Urban Frontier: Urbanisation and City Building in Australasia and the American West* (1991) 24-6.

Dense inner suburbs provided a mix of commercial, industrial and residential uses, sometimes with the owners and servants of capitalism living side by side, but equally hampered by crowding, pollution and overtaxed services. Suburban railways, which commenced in the 1850s and 60s, had provided wealthier citizens with opportunities to commute from more salubrious suburbs in the north west and south east of the city.¹⁰

Melbourne's tramways were intrinsically linked to this urban development both as cause and effect.



Figure 3: Melbourne in the 1880s showing existing radial rail services and fragmented grid of roads.

¹⁰ Graeme Davison, *The Rise and Fall of Marvellous Melbourne* 1978; Michael Cannon, *The Land Boomers* 1977; Geoffrey Searle *The Rush to be Rich: A History of the Colony of Victoria* 1971;.

2.3 Thematic/chronological history

2.3.1 Origins of trams, overseas development.

Melbourne's tramways grew in the context of development and refinement of transport technologies and economics derived from the second industrial revolution in Britain, Europe and the United States. That is, new forms of motive power, communications, manufacture and transport were invented and applied to the problems of creating consumer goods and moving the raw materials, products and consumers under a predominantly private capital economic structure. All examples of Melbourne's tramway development can be traced to precursors overseas, both in terms of their technology and financial or management structures.¹¹

The horse-drawn Swansea and Mumbles Railway in south Wales, UK, is credited as the first formal passenger tram or railway in the world, inaugurated by an Act of the British Parliament in 1804 and operating in 1807.¹² Alternatively, William Jessop opened the Surrey Iron Railway in south London in 1803 may lay claim to the world's first horse-drawn public railway.¹³ In the US, the first streetcars developed from city stagecoach and omnibus lines began with the New York and Harlem Railroad's Fourth Avenue Line in 1832,¹⁴ followed in 1835 by the St. Charles Avenue Streetcar, in New Orleans, Louisiana, which is the oldest continuously operating street railway system in the world.¹⁵ Sydney's (and Australia's) first tram was a horse-drawn, steel railed line in Pitt St, running from the Railway station to Circular Quay in 1861.¹⁶ In 1879 Sydney also opened Australia's first steam tram with a line to the Sydney International Exhibition near the Botanic Gardens.¹⁷

However, precursors to these passenger rail systems involving various combinations of flanged rail or wheel had been employed from the second half of the 18th century. Apart from ancient wagonways, using stone cut tracks, the earliest railways using wooden rails appeared in Europe in the 14th century. The use of iron for rails was therefore only a minor revolution in development, and by the mid 18th century wooden wagonways were common in the United Kingdom for transporting coal from mines to canal wharfs for transhipment to boats. The first iron plate railway made with cast iron plates on top of wooden rails was put into use in 1768 and from the 1790s, iron edge rails began to appear in the United Kingdom. Hot rolling iron allowed the brittle, and often uneven, cast iron rails to be replaced by wrought iron in 1805. These were succeeded by steel in 1857.¹⁸ Horse tramways, therefore, would have been a well established

¹¹ Alfred D. Chandler, Jr., *Scale and Scope: The Dynamics of Industrial Capitalism*, Belknap Press, Cambridge, MA, 1990.

¹² Charles E. Lee, *The Swansea & Mumbles Railway* Oakwood Press, Oxford, 1988, p.48

¹³ Surrey Iron Railway 200th - 26th July 2003". Early Railways. Stephenson Locomotive Society. <http://www.stephensonloco.fsbusiness.co.uk/surreyiron.htm>. Retrieved 19 September.

¹⁴ Stephen L. Meyers, *Manhattan's Lost Streetcars*, Arcadia Publishing 2005; *Journal of the Stephenson Locomotive Society*, Vol. 43, No. 509 (December 1967), p.364

¹⁵ James Gilbeau, *The Saint Charles Streetcar – or the history of The New Orleans and Carrollton Railroad*, 3rd edition 1992, Louisiana Landmarks Society

¹⁶ R.F. Wylie, *The 1861 Pitt Street Tramway and the Contemporary Horse Drawn Railway Proposals* *Australian Railway Historical Society Bulletin*, February, 1965 pp21-32

¹⁷ Margaret Simpson, *On the Move: A history of Transport in Australia*, Powerhouse Publishing, Sydney, 2004; R. Atkins, "The Sydney Steam Tram" in "Model Engineer" Vol. 143, 6 May 1977, pp.523-4; City of Sydney Archives. City of Sydney Archives.

¹⁸ Stuart Hylton, *The Grand Experiment: The Birth of the Railway Age 1820-1845*. Ian Allan Publishing. 2007

technology by the time Melbourne had grown to the point of needing such a street transport system.

The advantage of a horse tram over a horse omnibus (using wooden wheels running on normal road surfaces) is its smoother ride and ability to haul greater loads due to the lower rolling resistance of iron wheel on steel rail as compared to rough road surfaces, and the elimination of ruts and pot-hole damage to roads and wheels sinking in soft surfaces.

A variety of developments in motive power had also occurred in time for a relatively wide choice to be made when Melbourne was ready for trams. The first steam engine was patented by James Watt in 1794 and the first steam locomotive was demonstrated by its inventor Richard Trevithick in 1804. The first self-contained steam trams were used between 1859 and 1861 in Philadelphia, and from 1873 in London. By the 1880s, steam trams were commonplace in several cities. Cable-hauled trams had been employed in mines from the late 18th century and the cable tram system perfected in San Francisco by 1873.

Development of electric traction stems from the first experiments in alternating current electric commutator motors in the 1830s, although it was not until the 1880s that the first viable electric rail vehicle could be developed thanks to a more reliable direct current motor developed by Werner von Siemens in 1881. Siemens opened the world's first electric tramway in the suburb of Gross-Lichterfelde, (later incorporated into Berlin). In 1883, Magnus Volk constructed a 2ft gauge electric railway along the eastern seafront at Brighton, England. This is the oldest operating electric tramway in the world. The first tram for permanent service with overhead lines was the Mödling and Hinterbrühl Tram in Austria, which commenced operation in October 1883.¹⁹

The first electric street tramway in Britain, the Blackpool Tramway, was opened on 29 September 1885 using conduit collection along Blackpool Promenade. Since the closure of the Glasgow Corporation Tramways in 1962, this has been the only first-generation operational tramway in the UK that continues to survive as more second generation tramways are built.²⁰

Electric trams have run in Budapest since 1887, while Bucharest and Belgrade ran a regular service from 1894 and Sarajevo from 1895.²¹ An electric streetcar was commenced in Montgomery, Alabama in 1886 and another continuously-operating electrified streetcar system in the United States was established in Scranton, Pennsylvania in 1886. However, the first large-scale electric street railway system was the Richmond Union Passenger Railway built in January 1888. By 1890 over 100 such systems had been begun or were planned.²²

2.3.2 Summary of Melbourne's Tramway history

Melbourne's tram system had its genesis in the land boom of the 1880s, in a remarkable variety of different systems and widely separated locations. In 1884 a private steel-railed horse tram was built to serve a real estate development in the northern suburbs. A year later, the first cable tram line operated by the Melbourne Tramway and Omnibus Company opened for business. The first but short-lived electric tram commenced at Box Hill in 1889.

¹⁹ Iain Frew (ed) (1983). *Britain's Electric Railways Today*. Published by the Electric Railway Society and Southern Electric Group

²⁰ Palmer, Steve (15 October 2007). *Blackpool's Trams Past and Present*. Venture Publications Ltd.

²¹ http://en.wikipedia.org/wiki/History_of_trams

²² http://en.wikipedia.org/wiki/History_of_trams#Electric_trams

The first public steam operated tramway in Victoria (as opposed to railways) commenced in 1889 at Sorrento, where a novelty tram operated between the Bay steamer pier and accommodation and the ocean beach. The Sorrento Steam Tram depended on a vertically integrated tourism business involving bay excursion steamers and holiday accommodation, all run by the same entrepreneur, so the tram was probably not a viable operation on its own.

Early horse and steam trams were brief novelties, created as much for their ability to draw people to another more profitable attraction – land sales in the case of the former, and the beach in the case of the latter. The Fairfield Park horse-drawn tramway was as much a real estate agent's gimmick as a serious attempt at providing mass transit. The service was run only for prospective land purchasers, and to give the impression that the area would have convenient public transport. Once the land was sold, the service ceased. Other horse tramways operated in Sydney Road Coburg, in Caulfield between Elsternwick and Glenhuntly railway stations, between Sandringham and Cheltenham railway stations, and in Hawthorn, Kew and Royal Park. Several of them were subsequently converted to electric tramways.

Other Victorian cities including Ballarat, Bendigo and Geelong also developed tramways in the late nineteenth and early twentieth centuries. Bendigo briefly ran a battery-operated system in 1892, then a steam tram from 1892 until 1902. Electric trams followed in 1903, operated by the Electric Supply Company of Victoria in conjunction with generating electricity for sale to domestic and commercial users. Services were taken over by the State Electricity Commission of Victoria (SECV) in the 1930s and continued to operate at a loss until April 1972 when the Bendigo tramways were closed. Following closure a trust was established to continue to operate some of the Bendigo trams as a tourist service.²³

The Ballarat Tramways were commenced in December 1887, with six double-decked horse-drawn tramcars. Ownership was transferred to the Electric Supply Company of Victoria Ltd. in 1902, and the system was extended and electrified in 1905. Like the Bendigo system, Ballarat's tramways were taken over by the SECV in 1934, but operated unprofitably until finally being closed in 1971. A subsequent Tramway Museum was formed with a short section of track around Lake Wendouree kept in use.²⁴

Electric trams commenced in Geelong in 1912 operated by the Melbourne Electric Supply Company Limited (MESCo), which already provided the local domestic supply of electricity in Geelong.²⁵ The system was also taken over by the SECV and was ultimately closed due to low patronage and continuing losses in 1956.

A number of Melbourne trams were transferred to the regional city tramways as they became unsuitable for metropolitan use. As a result several early and unusual trams were retained in use

²³ Bendigo Tramways History, <http://www.bendigotramways.com>, accessed 28/2/2011; The Electric Supply Company of Victoria was taken over by the State Government State Electricity Commission of Victoria (SECV) in 1934 as part of the centralisation of the supply of electricity in Victoria. The SECV was in the power generation business, and did not want to operate the loss making provincial tramways of Bendigo, Ballarat and Geelong but was forced to by the State Government.

²⁴ "Ballarat's Tramway History", Ballarat Tramway Museum Inc. <http://www.btm.org.au/ballarathistory.htm>, accessed 28/2/2011

²⁵ "Geelong tramways - a short history". *Tramway Museum Society of Victoria* <http://web.archive.org/web/20060819124009/http://tmsv.org.au/papers/geelong.htm>. accessed 28/2/11

long enough for their historic value to be recognised, and so were eventually available for restoration as part of the tourist and heritage operations.²⁶

While the Hobsons Bay and Melbourne & Suburban railway companies proved the viability of heavy rail serving the wealthier suburban commuters of Melbourne from the late 1850s, a viable light rail or on-street tramway system running over the public roads took another 30 years to eventuate. This was in part because a successful horse omnibus system was already in place, so despite the cost and inconvenience of managing large horse fleets, trams had to compete on both establishment and operating costs. The critical factor was probably the technological limitations of available sources of motive power. Steam traction continued to be too heavy or cumbersome for small vehicles travelling at frequent intervals (as the street omnibus services had demonstrated) and the reliability of electric traction was still to be proven.

The cable tram, with its central power house transferring traction via a continuous wire rope running under the roadway, became the interim solution. With a relatively direct link between its invention and application in San Francisco, and its implementation on a grand scale in Melbourne within just a few years, the cable tram offered a frequent and accessible public transport, at an economic running cost, although capital costs were high.²⁷ Centralised power, in the form of large stationary steam engines set about midpoint along the lines, were cheaper to operate and maintain than the many separate engines required for a steam tramway. Even in comparison with horse transport, costs were competitive,²⁸ so that the system soon expanded to cover 15 terminus destinations ranging from Northcote, Richmond, St Kilda, Port Melbourne and North Melbourne, within a radius of about 4 miles (6.4km) of the GPO.²⁹

The construction and operation of the cable system required a complex administrative structure with the Melbourne Tramway Trust formed as the owner and constructor of the lines, representing the municipalities, and the Melbourne Tramway and Omnibus Co, leasing the lines and supplying the rolling stock. When the original lease agreement expired June 1916, the Tramways Board was formed to take over the cable system, and operated until 1919, when it was superseded by the Melbourne and Metropolitan Tramways Board.

The cable system continued in operation until World War Two, when the capacity limitations of driving all the cars on a line from one source showed that it could not handle the projected future growth in passenger numbers. The cable network also prevented the outlying electric routes from access the city directly, necessitating unpopular passenger transfers, while the technology was aging and expensive. The capacity of the tramcars themselves was also limited and there was a desperate need to build new trams to replace the aging fleet. Also there were difficulties in obtaining wire rope for the cables while changed cheaper electricity generated from Latrobe Valley brown coal changed the economics of motive power as electric trams prove supreme.

Australia's first electric tram line, from Box Hill Station to Doncaster was, like the Fairfield Park tram, built for selling real estate. The line was constructed in 1889 by a group of land developers using equipment left over from the Centennial International Exhibition of 1888. Like the cable trams, this was only a couple of years after the concept had been proven overseas, showing the

²⁶ William F. Scott Last tram at eleven : tramways of Ballarat, Bendigo, Geelong Full Parallel Productions, 2008.

²⁷ "The Melbourne Tramways", 1888 chapter in *Victoria and its Metropolis – Past and Present*, reprinted in Cranston (1988) *The Melbourne Cable Trams 1885-1940*.

²⁸ Powerhouse Museum, Sydney, catalogue, "Horse-drawn omnibus, 1898"
<http://www.powerhousemuseum.com/collection/database/?irn=207261>

²⁹ Keating, *Mind the Curve* p.

early uptake of technology which typified much of Australia's industrial history. Again it was a novelty (one already proved popular during the exhibition) running through mostly open farming country, between a raw suburban outpost on the railway line at Box Hill and an even less developed bucolic settlement on the heights of Doncaster.³⁰

The first serious electric tramways in Melbourne were commenced in 1906 when The North Melbourne Electric Tramways and Lighting Company Limited (NMETL) built a line from the edge of the cable system to the north west suburb of Essendon, and the Victorian Railways (VR) built a line in the south east from St. Kilda to Brighton. While the North Melbourne Essendon electric trams were seen as extensions of the cable system, the VR operated trams were a compromise means of extending the existing rail system. NMETL, a British concern, was interested in selling electricity to customers along the route.³¹ It built and operated two lines, one between the terminus of the Flemington Road cable tram at Flemington Bridge, then along Mt Alexander Road and Keilor Road and the other from Moonee Ponds along Maribyrnong Road to the Maribyrnong River.

The Victorian Railways operated line was built under Victorian Premier Thomas Bent who used his position to enhance the value of his property interests in Brighton, forcing the railways to build and operate a tram service. However, the Railway department insisted the tram be called a "Street Railway", and built it to the 5 ft 3 inch Victorian railway broad gauge instead of the proposed tramway standard gauge of 4 ft 8.5 inches, and connected it with the St Kilda Railway station instead of the cable tram terminus. The railways later built a second tram line (this time using standard gauge) as a cheap substitute for a much demanded railway extension from Sandringham.³²

In other parts of Melbourne, groups of local councils combined to form municipal tramways trusts in order to build electric tramways, generally as extensions or feeders beyond the cable tram network, with the exception of the Hawthorn Tramways Trusts (HTT) line, which ran to Princes Bridge. In 1910, the Prahran and Malvern Tramways Trust (P&MTT), was the first to commence operations, completing a depot in Malvern, and lines along High Street from Prahran to Tooronga Rd, and a branch line south along Glenferrie Road to Wattletree Road, where it turned east to terminate at Burke Road.³³

The Prahran & Malvern Tramways Trust was formed under the *Prahran & Malvern Tramways Trust Act 1907* to construct and operating electric tramways with the first lines opened on 30 May 1910. Initially representing the two councils through which the lines ran the trust was expanded to include first the municipalities of St Kilda and the Caulfield and then in 1913 Kew and Hawthorn in 1913. The Trust operated lines along High Street Glenferrie Road and Wattletree Roads and soon Dandenong Road, with an extension to connect with the St. Kilda Cable tramway to the City in 1912. In 1915, the City of Camberwell also joined the Trust, and the route was extended to Camberwell in 1916.

³⁰ Robert Green, et al *The Box Hill - Doncaster Electric Tramway* Pamphlet first published by City of Box Hill, 1989 on behalf of the Box Hill - Doncaster Electric Tram Centenary Committee. Reprinted in 1998 by the City of Whitehorse

³¹ The same motive led to the establishment of the Ballarat, Bendigo, and Geelong electric tram systems.

³² Marshall-Wood, L. 1966, *The Brighton Electric Line*, Traction Publications

³³ Graeme Breydon Feeding & filling : the story of the Prahran & Malvern Tramways Trust Tramway Museum Society of Victoria, 1990

The Hawthorn Tramway Trust was established in 1914, initially taking over the Hawthorn horse tramway (which ran from the Yarra River at Bridge Road to Auburn Road) and converting it to electric traction. It had also built new electric lines from Princes Bridge to Burwood and Wattle Park.³⁴ By running to Princes Bridge, it became the first electric tram to serve the CBD. A cable line was not built along Swan St because of the closeness to the rail line.

The Melbourne, Brunswick & Coburg Tramways Trust was formed in 1914, following the takeover of the former Northern Tramway Company's Sydney Road Horse tram operated by the Coburg Council in 1911. The MBCTT initially operated lines from near the cable tram terminus at the north end of Madeline (now Swanston) Street Carlton, along Lygon Street, and along Nicholson Street to the Coburg cemetery, and branching at Moreland Road to head up Sydney Road.

The Fitzroy, Northcote & Preston Tramways Trust (FNPTT) was created as a consequence of both the Northcote Council's prior ownership of the High Street cable tramway and local desire to emulate the perceived convenience and success of the Prahran and Malvern tramway. Fitzroy, Northcote and Preston formed a municipal tramways trust in 1915, with routes commencing at the North Fitzroy cable tramway terminus, continuing along St George's Road to Miller Street, Preston, then splitting into two branch lines, one heading west along Miller Street Gilbert Road to terminate at Regent Street, West Preston, and the other heading east on Miller Street to Plenty Road to Tyler Street, East Preston.

The Footscray Tramway Trust was the last to be formed but did not commence operations under its own name, having been absorbed by the MMTB by the time the lines could be opened. Footscray was somewhat isolated from the rest of the existing tram systems, and any connection to the city had to deal with a considerable distance across the West Melbourne Swamps and docks, where there was very limited potential revenue. As a result the Footscray tramway grew as an isolated system feeding the railway station. Lines ran north to Ballarat road and the Maribyrnong River, to meet up with the North Melbourne system, south to Yarraville and west to Kingsville and Tottenham.

The Melbourne and Metropolitan Tramways Board was formed in 1919, as part of a rationalisation of suburban public transport in Melbourne under the State government. The M&MBT took over operation of the cable system and the various municipal trusts, resulting in a wide range of vehicle types and some differences in operation systems. The Board took over running of the Prahran and Malvern Tramways Trust, the Hawthorn Tramways Trust, the Fitzroy, Northcote & Preston Tramways Trust and the Melbourne, Brunswick & Coburg Tramways Trust, as well as the Melbourne Tramway & Omnibus Companies cable system, which had reverted to the Melbourne Tramway Trust in 1916, when the licence agreement expired the board also took over the NMETL lines. The two tram lines operated by the Victorian Railways were not taken over by the MMTB.

The M&MBT undertook a significant modernisation of the system, progressively converting the cable trams to electric traction, constructing new depots, electricity substations and both extensions to the existing lines, and entirely new routes. Part of the MMTB plans included developing a new tramcar design able to cope with much higher passenger loads, which led to the W class and its many variations. Instigation of bus routes was an integral part of the Board's

³⁴ Public Records Office Victoria, Agency Hawthorn Tramways Trust, VA 2978
<http://www.access.prov.vic.gov.au/public/component/daPublicBaseContainer?component=daViewAgency&entityId=2978#> viewed 11/10/2010

strategy, both for temporary replacement of cable trams as they were decommissioned, and for expanding the catchment to less populated areas, and beyond the electric tram system. The Preston Tramway Workshops were constructed to integrate and centralise tram manufacture and maintenance, into the Tramways Board's operations.

After the Second World War, when other Australian and overseas cities were removing street tramways in favour of improving car traffic, the Chairman of the MMTB, Sir Robert Risson, aggressively defended Melbourne's tramways, and even managed to upgrade some aspects of the system.

While the system was neglected to some extent in the late 20th century under The MET and its successors, with the retention of the W class as the main rolling stock, in the 1970s a new, modern style of tram was developed in the Z-class, which led on to a variety of other local and imported designs.

The first decade of the twentieth century has seen a revitalisation of the system, with new routes, rolling stock, greater priority given to trams in sharing the roads and upgraded passenger facilities.

In 1983 the M&MBT was amalgamated with the Victorian Railways suburban services to become the Metropolitan Transit Authority, with "The Met" as its trading name. The Met started experimenting with ticketing systems and introduced new more modern trams. In 1993 the Public Transport Corporation was formed to operate the Melbourne public transport system although it kept "The Met" as its trading name.³⁵

The PTC was corporatised in 1998, as a prelude to privatisation, and in 1999 the trams system was split between two private operators Yarra Trams, and Swanston Trams, which were the operating names of the two franchisee companies Transfield Services and National Express Group respectively. Yarra trams was taken over by Melbourne Metrolink, owned by the French, and Swanston Trams by National Express, owned by the British and later rebranded as M>Tram. Subsequently in December 2002, National Express, which was the operator of three of the five franchises, two rail and one tram, walked away from their contracts so that all of the tram system came under a single operator once again, albeit a private company in 2004.³⁶ The current franchisee of the Melbourne tramway system is the "Keolis Downer EDI Rail" partnership.

.

³⁵ Metropolitan Transit Authority, 1983, *100 years of Melbourne's trams* / Metropolitan Transit Authority, and Australian Tramway and Motor Omnibus Employees Association

³⁶ Richard Allsop Victoria's public transport, Assessing the results of privatisation Institute of Public Affairs *IPA Backgrounder*, April 2007, Vol. 19/1

Table 4: Summary of operation of Melbourne Tramlines

	Tramway Scheme or route	1880	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010
	Operator			MT&OC		TB	MMTB						MET	Yarra / Swanston	Yarra Trams
	Sorrento Steam Tram														
Horse	Fairfield Park														
	Beaumaris														
	Caulfield														
	Northern Tramway Company (Coburg)														
	MT&OC Kew														
	MT&OC Hawthorn														
	MT&OC Royal Park (Zoo) line														
Cable	MT&OC Spencer Street - Richmond														
	North Fitzroy														
	Victoria Bridge														
	Clifton Hill														
	Nicholson Street														
	Brunswick														
	Johnston Street Bridge														
	Brighton Road														
	Prahran														
	North Carlton														
	Toorak Road -Chapel Street														
	North Melbourne														
	West Melbourne														
	South Melbourne														
	Port Melbourne														
	Windsor, St. Kilda Esplanade														
	CHMPTC Northcote														
Electric	Box Hill Doncaster														
	VR St Kilda - Brighton														
	Sandringham to Black Rock														
	NMETLC Essendon														
	Puckle Street														
	Moonee Ponds Junction														
	Essendon Aerodrome line														
	P&MTT High Street														
	Glenferrie Wattleree Rd														
	Glenferrie and Dandenong Rd														

	Tramway Scheme or route	1880	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010
E l e c t r i c	Hawthorn, Balaclava Rd														
	Balaclava Waverley Rds														
	Hawthorn, Glenhuntly Rds.														
	Glenhuntly Road.														
	High Street extension														
	Kew														
	Commercial, Malvern Roads														
	Whitehorse Road.														
	FTT Russell Street														
	Ballarat Road														
	Williamstown Road														
	West Maribyrnong														
	Footscray connecting line														
	MBCTT Lygon St Sydney Rd														
	Sydney Road														
	Lygon Street, Nicholson St														
	West Brunswick line														
	Holden Street link														
	East Brunswick line														
	HTT Burwood.														
	Batman Ave, Swan Street														
	Riversdale Road Wattle Park														
	FNPTT St Georges Rd														
	MMTB Church St Kew														
	Chapel St.														
	St Kilda Beach														
	La Trobe Street														
	Burwood line extension														
	Plenty Rod Bundoora extension														
	Port Melbourne light rail														
	St Kilda Light Rail														
	Airport West extension														
	Box Hill extension														
	Docklands extensions														
Denotes takeover or operation by MMTB from 1920															

3.0 DEVELOPMENT OF MELBOURNE'S TRAMWAY SYSTEM (THEME 6.3 SHAPING THE SUBURBS)

Melbourne's growth as a commercial, industrial and suburban city in the late nineteenth century and early 20th century is closely tied to its railways and tramways as an essential element of a public transport system which resolved the paradoxical conflicts of increasing segregation of land uses. That is, as people chose and were able to live further from their workplaces, and industrial and commercial zones became separate areas, sometimes distant from the homes of their employees and customers, an efficient means was needed to move people between their homes, workplaces, businesses, shops and recreation. Transport options were limited, foot and bicycle had a limited range and exposed the traveller to the vagaries of the weather. Horse and carriage were expensive to maintain, and so available only to the wealthy. The rail network had limited catchment and destinations.

Public transport and urban development therefore went hand in hand. The provision of an efficient and affordable transport network allowed people to live well away from the insalubrious industrial areas or congested commercial centres, and at the same time contributed to the establishment and growth of suburbs, where fresh air, open space and a healthy environment were maintained by excluding other land uses. While the cable tramways primarily served inner suburbs, and because of their low fares also met the needs of working class commuters, the electric trams, running on longer routes and feeding outlying areas served a predominantly middle class suburban commuter. This followed the concept in other major cities around the world.³⁷

The progress of the tramway systems (like the railways which preceded them) involved an array of separate private and public schemes with a few dead ends, eventually coming together in a single consolidated system. Horse drawn, cable operated and electric trams were all tried and each served a purpose.³⁸

3.1 Horse drawn omnibuses and trams

Prior to the introduction of trams, Melbourne's public transportation was provided by horse-drawn vehicles, including a variety of carriages for hire, Hansom cabs and horse drawn omnibuses. These were in operation in the 1850s and 60s, generally under individual ownership, although various councils tried to regulate cabs and omnibuses.³⁹

In 1869 Francis Boardman Clapp established the Melbourne Omnibus Company with William McCulloch and Henry Hoyt. The firm operated a fleet of eleven horse-drawn buses from the city to Fitzroy and soon the buses were running to Richmond, Carlton and North Melbourne. Suburban development encouraged the company to expand its network and, by 1881, its fleet consisted of 158 horse buses, each carrying 12-14 seated passengers, operating within a three-mile radius of the city. Some services extending as far as Moonee Ponds, Prahran and

³⁷ Graeme Davison, 'Suburbs and Suburbanisation' (see also Public Records Office Victoria, Agency VA 1044 "Metropolitan Transit Authority", note that while steam powered trams were tried in Bendigo and Sorrento, and various light gauge country railways, they were not employed in the metropolitan area, despite having been successful interstate in Sydney, Rockhampton and other cities.

³⁸ Wilson, Randall, and Dale Budd, *The Melbourne Tram Book*, University of New South Wales Press, Sydney, 2003.

³⁹ "Horses" *Encyclopedia of Melbourne* 2005 Cambridge University Press.

Brunswick.⁴⁰ The success of the firm led manufacturer and shipowner, John McIlwraith to claim, 'In my travels I have found no place better supplied with omnibuses, cabs or carriages than Melbourne'.⁴¹ Clapp built up a considerable business through expansion and monopoly, establishing conditions which made possible the next venture in public transport – the cable trams.⁴²

Clap would have appeared to be closely involved in lobbying for the introduction of horse trams, even before the cable tram system was decided upon. The Melbourne Tram & Omnibus Company constructed and exhibited a ¼ scale horse-drawn closed trailer or saloon car tram model, which is believed to have been displayed at the 1880 Melbourne International Exhibition as an American-style horse tram. The tram is similar in design to the trailer cars used by Melbourne's cable trams. By 1888 it was displayed in its present form at the Melbourne Centennial Exhibition with a cable tram grip or dummy car added to promote the introduction of trams in Melbourne.



Figure 4: Model of tram Museum Victoria, probably commissioned and displayed to promote the concept of tramways in Melbourne.⁴³

The model was subsequently painted to represent a Collingwood & Clifton Hill line cable tram trailer, which first ran in August 1887, suggesting it continued in its public relations duty once Clapp had determined cable haulage was a better prospect than horses.

Melbourne has had seven horse tram routes, a number run directly by land development interests. As with the early Doncaster electric tramway, the provision of a transportation service

⁴⁰ Robert Green, Melbourne's Early Trams, *The Genealogist*, September 1991, pp408-411

⁴¹ J. Ann Hone, 'Clapp, Francis Boardman (1833 - 1920)', *Australian Dictionary of Biography*, Volume 3, Melbourne University Press, 1969, pp 397-398.

⁴² Hutson, Jack, 'The Melbourne Cable Trams, 1885-1940: Men of Perception, F. B. Clapp and W.C. [i.e. George William] Duncan', *Recorder* (Australian Society for the Study of Labour History, Melbourne Branch), vol. 165, December, 1990, pp. 2-9. Details

⁴³ <http://museumvictoria.com.au/melbournemuseum/whatson/current-exhibitions/melbournestory/favourite-objects/cable-tram-model/>

to a newly developed suburban area could enhance land values and give the impression of a well service district.

The first tramline of any type in Melbourne opened on 20 December 1884, running from Fairfield railway station, to Charles Henry James' land development known as "Fairfield Park" James had bought up tracts of land in Fairfield and Alphington and as far north as Thornbury in the 1880s. Early subdivisions catered for affluent buyers with small acreages perfect for "gentlemen's residences" along the Yarra in the prestigious estates of Fulham Grange and Fairfield Park.⁴⁴ The creek frontages were sold separately as Darebin Glen and, in order to make his smaller estates on the flat land more attractive, and also as a sales gimmick to attract potential buyers, James established the horse tramway, which ran the length of Station Street. This was almost entirely a land sale promotion, but closed by 1890 when sales fell off due to the onset of the Depression.⁴⁵



Figure 5: Horse drawn tram of the Beaumaris Tramway Company. City of Kingston Historical Website

Likewise the Beaumaris Tramway Company operated from 1887 to 1915 between Sandringham and Cheltenham railway stations, through Black Rock and Beaumaris,⁴⁶ while the Caulfield Tramway Company operated spasmodically between Elsternwick, Caulfield and Glenhuntly railway stations from 1889 to October 1902.⁴⁷ The rails were apparently still to be found in Glenhuntly Rd when the electric trams were put through in 1913.⁴⁸

⁴⁴ *Fairfield, Darebin Historical Encyclopedia*; William George Swift, *The History of Northcote: from its first settlement to a city*, Northcote, Leader, 1928.

⁴⁵ Green, R. the Fairfield Park Experiment, *Trolley Wire*, February 1975, Vol 16 No 1 Issue 156 pp.3-6.

⁴⁶ Horse Trams from Cheltenham to Sandringham, Kingston Historical Web Site, <http://localhistory.kingston.vic.gov.au>

⁴⁷ Caulfield South Shopping Centre Draft Heritage Guidelines February 2003, City of Glen Eira, see also - Murray, P & Wells, C. *From Sand, Swamp and Heath: A History of Caulfield*, Melbourne 1986

⁴⁸ Russell Jones, "Hooves and iron: Melbourne's horse trams". Friends of Hawthorn Tram Depot 2001-3 <http://www.hawthorntramdepot.org.au/papers/horse.htm>, retrieved 11.11.2010.



Figure 6: Route of the Sandringham Horse Tramway

The Northern Tramway Company operated a horse tramline along Sydney Road from the Brunswick cable tram terminus at Moreland road to Gaffney Street Coburg operating from 1889 to 1915 when it was taken over as part of the Brunswick & Coburg Tramways Trust.⁴⁹



Figure 7: Horse tram at corner of Bell street and Sydney road c1903-16, Coburg Historical Society

The Melbourne Omnibus Company was established in 1869 by Francis Boardman Clapp, William McCulloch and Henry Hoyt. It initially operated 11 horse-drawn buses from Flinders Street and Spencer Street stations via Bourke Street to Fitzroy. The three-penny fare was cheaper than a cab ride and so business expanded with services to Richmond, Carlton and North Melbourne. With the potential recognised for other traction forms, the company was reformed as the Melbourne Tramway and Omnibus Co Ltd (MT&OC) in 1877. The MT&OC extended its

⁴⁹ Tramway Museum Society of Victoria Ltd, *Running Journal*, Vol 9 No 6, December 1972

operations to other suburbs and by 1882 it had 470 employees and 1600 horses and 178 horse buses running on fifteen routes.

The MT&OC commenced two horse tramways, one to Kew in 1887 from the Victoria Bridge cable tram terminus to Boroondara Cemetery and the other in 1890 from Hawthorn Bridge via Burwood Road, Power Street and Riversdale Road to Auburn Road. Both lines managed to operate economically, probably due to the well established suburban and commercial development already along their routes and the ability to provide low cost extensions to the cable tram system.⁵⁰

The Kew line was purchased by Kew Council in 1914 during the expansion of the Prahran and Malvern Tramway Trust operations, and was replaced with an electric tramway in 1915. The Hawthorn line was sold to the Hawthorn Tramway Trust, closed on 31 January 1916, and replaced with an electric tram six months later.

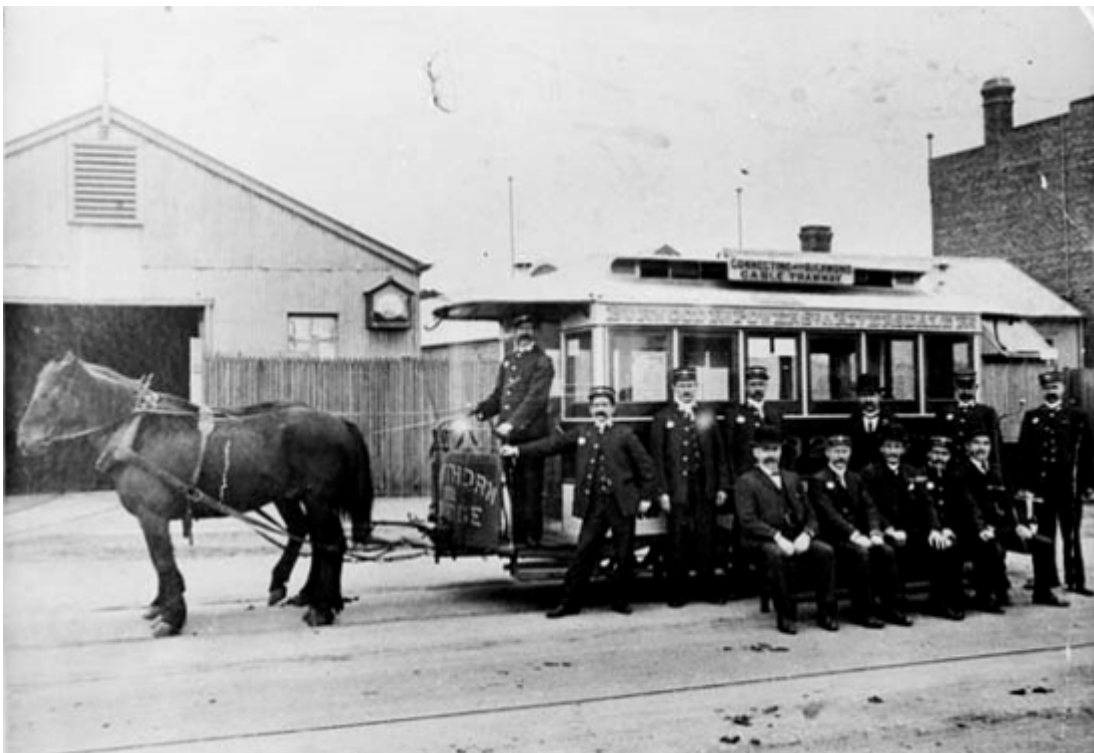


Figure 8: MT&OC horse tram at Auburn and Riversdale Road depot, circa 1910. Public Record Office Victoria. VPRS12800 P1, H5359

In 1888 the MT&OC was authorised by the Zoological Gardens Committee, to construct and operate the Royal Park Horse tramway.⁵¹ This ran from the intersection of Gatehouse Street and Royal Parade in Parkville on the Brunswick cable tramline to the Zoo commencing on 10 March 1890. The MT&OC had previously operated horse omnibuses along the route and employed the horse tramway as the chiefly week-end traffic volumes did not justify the capital expense of a

⁵⁰ Melbourne Tramway and Omnibus Company Limited Public Records Office Agency VA 2976 <http://www.access.prov.vic.gov.au/public/component/daPublicBaseContainer?component=daViewAgency&entityId=2976>.

⁵¹ The tramway operated under a lease provided for by the Zoological and Acclimatization Society Act 1888 (No.974). see also Public Records Office Agency VF 180 Zoos, <http://www.access.prov.vic.gov.au/public/custom/jsp/daPublicBaseContainer.jsp>

branch cable tramway. The car shed and stables were adjacent to the Zoo entrance. This tramway was not covered by the leasing arrangement with the Melbourne Tramway Trust.⁵²



Figure 9: Zoo Horse Tram c1915 Coburg Historical Society

This was the last horse tram route still in operation in Melbourne when the MMTB was formed in 1919. Costs of maintaining horses led to the one of the saloon cars being fitted with a petrol engine. However, the experiment was not a success, and following a fire during the Victoria Police strike of November 1923, which destroyed the horse tram depot and stables all four cars, the line was closed by the MMTB.⁵³

Horse trams, as well as other forms of urban horse transport, were considered a health problem due to the large quantities of manure accumulating. Along with the comparable costs of maintaining horses, including when they were not working, this was one of the reasons why Melbourne embraced cable trams rather than more horse trams in the late nineteenth century.

3.2 Steam Tramways

Sydney experimented early with steam trams and adopted them extensively in the latter part of the nineteenth century. However, they were rare in Victoria. Sydney, Newcastle and Broken Hill had steam trams, and the Parramatta one ran through until the 1940's. Bendigo toyed with the idea and ran one briefly in 1892 when it used both battery and then steam trams.⁵⁴ While well outside of the Melbourne metropolitan area, the Sorrento Steam tram linked with bay excursion steamers to carry tourists between the front and back beaches at the resort town of Sorrento on the Mornington Peninsula, which had become a favoured beachside resort of the well-to-do of Melbourne from 1870 until the First World War.⁵⁵ The scheme was created by the remarkable entrepreneur, noted actor, theatrical impresario, philanthropist, banker, developer and politician George Seth Coppin.⁵⁶ A horse tram was used in the less busy off-season times. The lack of

⁵² A.E. Twentyman "The Zoo Horse Tram" *Running Journal* - Volume 10, Number 5 October 1973

⁵³ A. E. Twentyman "The Zoo Horse Tram", *Running Journal*, October 1973

⁵⁴ Bendigo Tramways web site http://www.bendigotramways.com/index.php?option=com_content&view=article&id=46:history&catid=34&Itemid=58

⁵⁵ Winzenried, A.P. (1984) *Tram to Sorrento*, APW Productions

⁵⁶ A Howlett "The Sorrento Steam Tram" *Running Journal* Vol. 9, No. 4, August 1972

steam trams in Melbourne can be explained by the initial success of the cable system, which prevented any competing forms of motive power until electric trams had been perfected and proved more economical to run.



Figure 10: Steam tram, Sorrento Back Beach. Public Record Office Victoria.

3.3 Cable Trams

English (or possibly Scottish)-born Andrew Hallidie was a manufacturer of steel wire rope who developed the world's first cable street tramway, opening the Clay Street Hill Railway in San Francisco on September 1, 1873. This expanded to a complex system of several lines, with other US cities adopting it over the next 3 decades. The design of the system may have drawn from coal mining precedents, using a wire rope haulage powered by a central engine house with the cable set in tunnels under the road, and drawing tramcars via a releasable grip mechanism.⁵⁷



Figure 11: Early California combination cable car on Clay St line
<http://www.thisdaytrivia.com/content/cablecar1873.jpg>

⁵⁷ Jack Cranston *The Melbourne cable trams 1885-1940* Craftsman Publishing, 1988.

3.3.1 Melbourne Tramway & Omnibus Company Limited

Francis Boardman Clapp of the Melbourne Omnibus Co. became aware of the San Francisco system, bought the Victorian patents of Andrew Hallidie's inventions in 1877 and introduced the cable operated tram system to Melbourne. He and changed the name of his company to the Melbourne Tramway & Omnibus Company Limited (MT&OCo) and a Board of five Directors was appointed with Clapp as first Managing Director. After years of lobbying by the MT&OCo. the Victorian colonial government passed the *Melbourne Tramway and Omnibus Act* in 1883 citing the trams "... would be of great public and local advantage".⁵⁸

The recent appearance of steam trams in Sydney and the growing congestion of roads in the boom times may have been part of the impetus to this move, but the enthusiasm and entrepreneurship brought by Clapp was probably of equal influence. He had been trying to get approval for a horse tramway from at least 1860, and when he established the Melbourne Omnibus Co, he had a tramway in view.⁵⁹ A Municipal Conference in September 1882 had settled on a compromise between private and public ownership, determining that tramways would better serve the community if they were constructed by a body representing interested municipalities who would therefore retain control of the public streets, with the private company engaged to operating them under lease. The Act precluded the use of steam tractive power, possibly to ensure Clapp's cable system would not come under competition from other interests such as the successful Sydney steam trams.⁶⁰



Figure 12: 1/4 scale cable tram grip car (Museum Victoria)

⁵⁸ M.T. & O.C. Ltd was registered under Companies Statute, 1864 on 11 September 1877. The Melbourne Tramway and Omnibus Company's Act 1883 [http://www.austlii.edu.au/au/legis/vic/hist_act/tmtaoca1883441/Board of five Directors](http://www.austlii.edu.au/au/legis/vic/hist_act/tmtaoca1883441/Board%20of%20five%20Directors), Francis Boardman Clapp first Managing Director.

⁵⁹ Tramway guide to Melbourne and Suburbs, published by the MT&OCo Ltd 1895.

⁶⁰ Melbourne Tramway and Omnibus Company Limited Public Records Office Agency VA 2976, <http://www.access.prov.vic.gov.au/public/component/daPublicBaseContainer?component=daViewAgency&entityId=2976> retrieved 1/9/2010

Clapp had been actively lobbying for tramway construction, initially looking at horse trams, but soon seeing the benefits of the cable tram system and to this end, he appears to have commissioned a ¼ scale model, which was exhibited in the 1888 Centennial Exhibition, along with the repainted horse tram from the 1880 exhibition. The model is painted to represent a Collingwood & Clifton Hill line tram which ran via Smith & Gertrude Streets and along the south end of Nicholson Street (then called Evelyn Street) to the city. This service first ran in August 1887.

Under the Act, local councils whose streets would become part of the proposed network set up the Melbourne Tramways Trust to build tracks and powerhouses for the cable trams which were leased to the MT&OC. Who provided the trams and operated the services. George Smith Duncan was appointed as consulting engineer for the construction of the tramway network. He continued to serve as company engineer until 1892.

The system grew to about 75 km of double track and 1200 cars and trailers, on 17 routes, which radiated from the centre of Melbourne to what are now inner and middle suburbs. It was one of, if not the largest cable car systems in the world, comparable with the San Francisco and Chicago cable car networks. The Melbourne Tramway and Omnibus Company operated the system from 1885 to 1916, when the newly formed Tramways Board took it over for the Victorian Government.

The first line to be completed was the Spencer Street-Richmond line, along Flinders Street, Wellington Parade and Bridge Road to the Hawthorn Bridge. It opened on 11 November 1885.

Under terms of the lease the Company procured land and built sixteen car houses and a repair shop and operated the trams during the whole term of its lease. While most of the original horse bus routes were replaced by the cable trams, the Company continued to run the horse buses on some lines in East Brunswick, Prahran and Malvern, on Dandenong Road, in Moonee Ponds, Kew and Hawthorn.⁶¹

The Melbourne cable tram network became the largest integrated system of its type in the world. Even while it was under construction, American journals were describing it as “will be the most extensive system of cable railway ever constructed.”⁶² On the expiry of its lease on 30 June 1916, the MT&OC surrendered its authority to operate the city's cable network and the Royal Park horse tramway to the Tramways Board, the forerunner of the MMTB. The MT&OC ceased to function as a passenger carrier from 1 July 1916 and was ultimately de-registered in 1922. From the 1920s the cable tram lines were progressively converted to electric traction and bus operation with the last Melbourne cable tram operating on 26 October 1940.⁶³

⁶¹ A Twentyman, The Melbourne Cable Tram Network, Trolley Wire October 1975pp.4-13

⁶² WW Hansen, Archaeology of the Cable Tram, Soudechment Books 1970, , reprinted from the Mining and scientific Press 1885

⁶³ Melbourne Tramway and Omnibus Company Limited Public Records Office Agency VA 2976

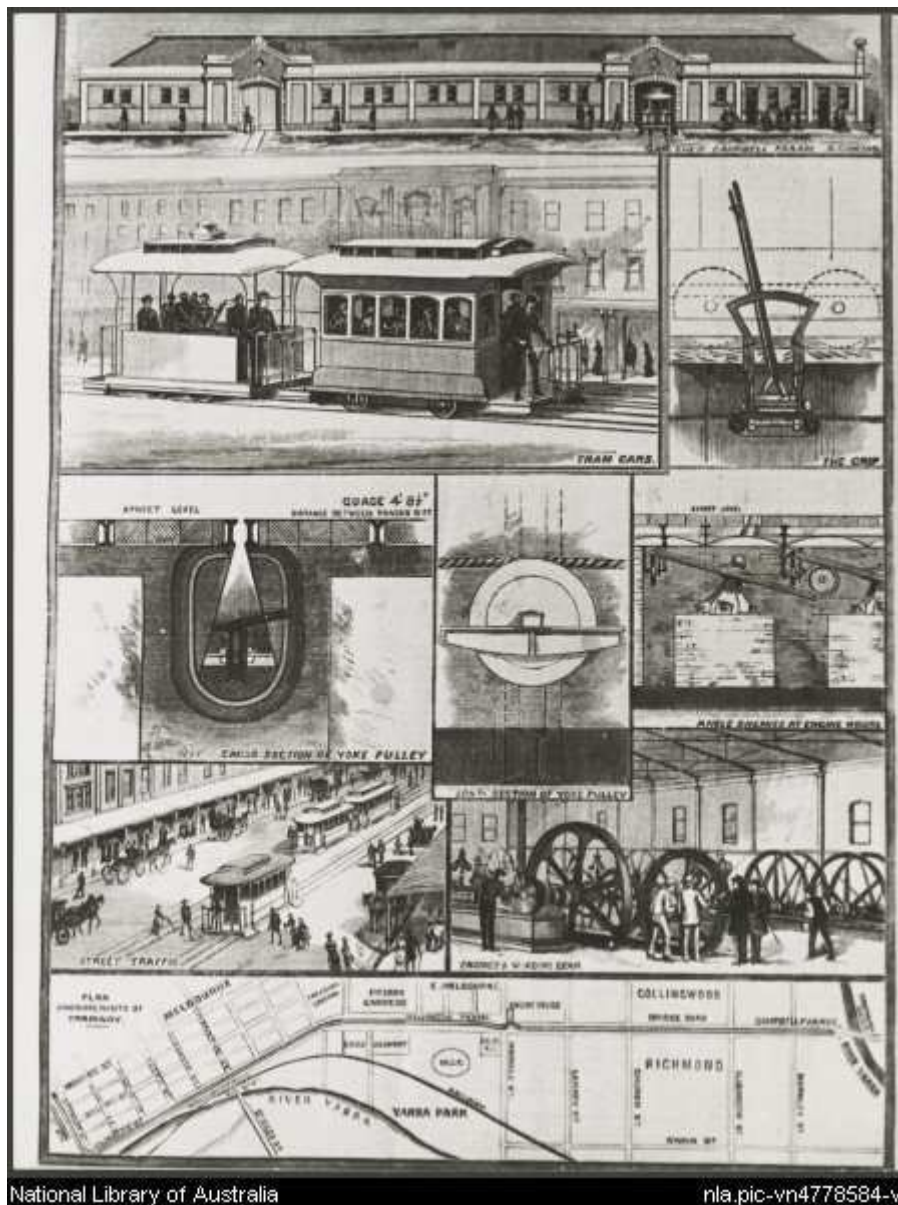


Figure 13: Illustration of the operation and route of the Richmond cable tram, issued by the Melbourne Tramway and Omnibus Company, Melbourne, 1885 nla.pic-vn4778584

The cable tramway grew rapidly with lines extending to most of Melbourne's inner suburbs. The Company constructed this line as the agent of the Melbourne Tramways Trust, pending the floating of the Trust's first loan.⁶⁴ Further lines were added progressively over the next 5 years as summarised in the following table.

⁶⁴ Public Records Office Agency VA 2692; George W Hilton, *The Cable Tram in America*, 1971

Table 5: Routes and opening dates of Cable Tram lines

Route	Opened	Via	Engine house	Tram barn	Extant / demolished
Spencer Street - Richmond	11 November 1885.	Spencer from Bourke to Flinders, Flinders to Wellington Parade, Bridge Road to Hawthorn Bridge.	Bridge Road, at Hoddle Street,	649 Bridge Road Richmond	Engine house mostly demolished for a left turn lane. Car shed – facade only to modern office
North Fitzroy	2 October 1886	Collins St Brunswick St, St Georges Rd	NE corner of Victoria Parade and Brunswick Street.	337-361 St Georges Rd.	Engine house demolished 2010, Car barn demolished
Victoria Bridge	22 November 1886	Collins St Victoria Street	Shared with North Fitzroy	640 Victoria Street Richmond	Car barn demolished
Clifton Hill	10 August 1887	Bourke St Evelyne, Gertrude, Smith, Heidelberg Rd, (later combined with Northcote Cable tram in High St	SE corner of Nicholson Street and Gertrude Street.	480-484 Queens Parade & 266-284 McKean Street Fitzroy North	Engine house extant Car shed demolished
Nicholson Street	30 August 1887	Bourke St Nicholson St	Shared with Clifton Hill	Nicholson St – adjacent to workshops	Car shed demolished (later MMTB building possible related)
Brunswick	1 October 1887	Elizabeth St Sydney Rd	NW corner of Brunswick Road and Black Street.	807-823 Sydney Road Brunswick	Engine house extant Car shed demolished – for Brunswick MMTB depot
Johnston Street Bridge (Carlton)	21 December 1887	Lygon, Elgin, Johnston	north side of Johnston Street, near Brunswick Street.	436-438 Johnston Street Abbotsford	Engine house Facade only (supermarket) Car shed demolished
Brighton Road	11 October 1888	St Kilda Rd Brighton Rd	St. Kilda Road and Bromby Street	 16 Brighton Road & 2 Brunning Street Balaclava	Engine house extant altered for Kellow Falkiner motor showroom by H Norris 1928 Car shed altered but extant – office intact with 2 nd story Tramways Board addition

Route	Opened	Via	Engine house	Tram barn	Extant / demolished
Prahran	26 October 1888	Swanston Street St. Kilda Rd Domain Rd Park St Toorak Rd Chapel St	NW corner of Toorak Road and Chapel Street.	Chapel St north of engine house	Engine House extant altered Converted to capital bakery Car shed extant, some changes to facades and interiors
North Carlton	9 February 1889	Lygon Elgin Rathdowne Sts	SW corner of: Rathdowne Street and Park Street.	Adjacent to engine house	Engine House and joint car shed both extant but only 2 bays of former 6 of car shed- altered apartments and car park
Toorak	15 February 1889	Chapel St	Shared with Prahran	92-98 Chapel Street Balaclava	Car shed demolished
North Melbourne	3 March 1890	Elizabeth St Victoria St Errol St, Queensbury St	SW corner Queensberry Street and Abbotsford Street.	Flemington Road Later Tramways Board shed Howard St North Melbourne	Engine House Extant altered apartments Flemington Rd Car shed demolished Howard St car shed partly extant
West Melbourne	18 April 1890	Spencer St Flemington Rd	Shared with North Melb	Shared with North Melb	
South Melbourne	17 June 1890	Clarendon, Park, Montague, Victoria	City Road, South side near Cecil Street.	Victoria Ave, Middle Park	Engine House Facade only extant Victoria Ave. Car shed office extant – tram barn demolished
Port Melbourne	20 June 1890	City Rd, Bay St	Shared with Sth Melb	65 Beach Road Port Melbourne	Beach Rd car shed demolished
Windsor to St. Kilda Esplanade	17 October 1891	Wellington, Fitzroy, Esplanade Acland	North side Wellington Street, near Marlton Crescent first major line to close on 25 August 1925.	Esplanade St Kilda	Engine House Possibly extant Car Shed demolished

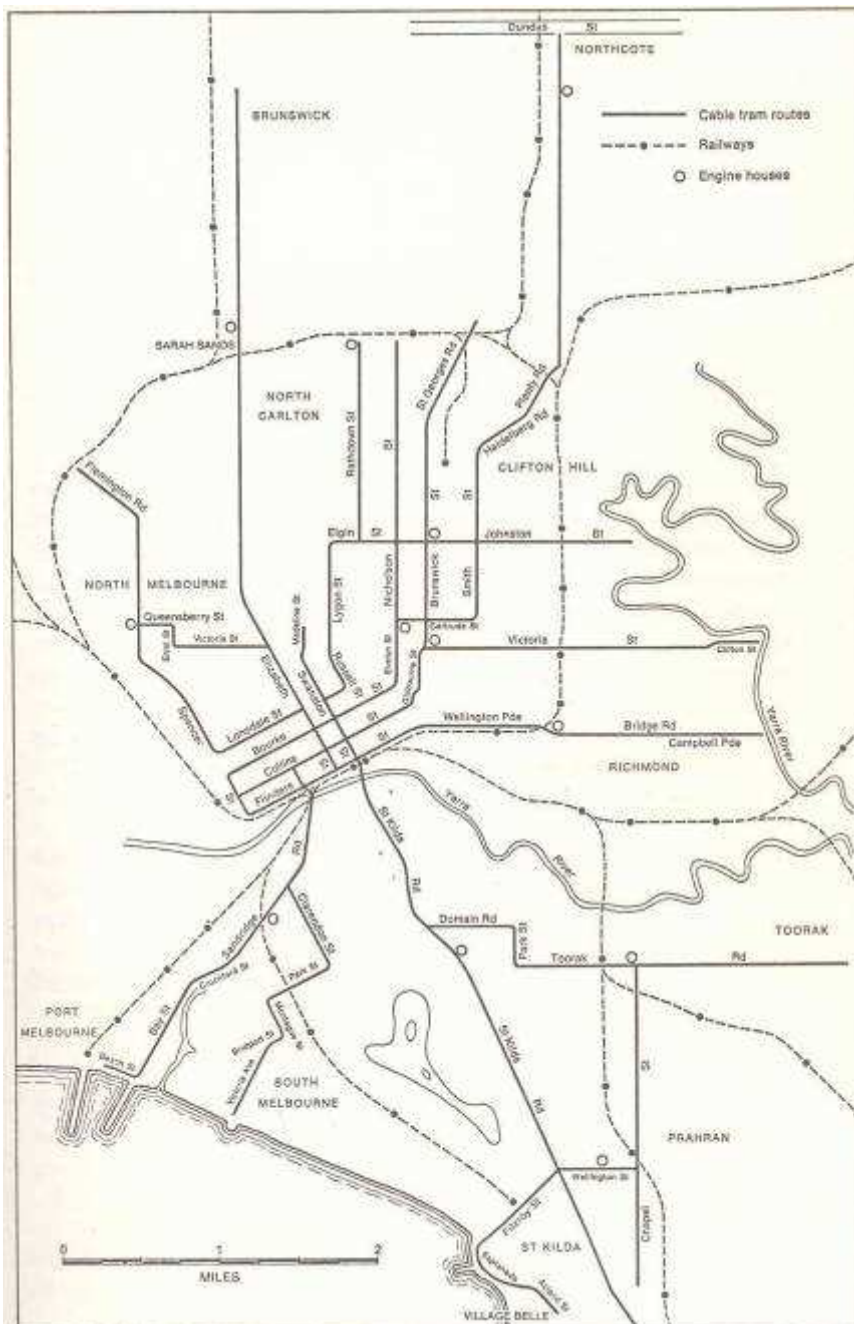


Figure 14: Melbourne Cable Tramway System c1901 (from 'Mind the Curve')

(note some engine houses in incorrect locations and Nicholson St tram workshops not shown) ⁶⁵

⁶⁵ Ken McCarthy Melbourne Tramway Centenary The Cable Tramway Era, *Trolley Wire Journal of the Australian Tramway Museums*, October 1985 pp.3-23 & December 1985 pp3-16



Figure 15: Brunswick Cable Tram Car Shed, Sydney Road, prior to 1938, Moreland Library L7_12



Figure 16: Cable tram tracks being removed from Lonsdale Street in February 1962.⁶⁶

⁶⁶ Photo source <http://www.walkingmelbourne.com/forum/viewtopic.php?f=11&t=275&start=45>

3.3.2 Clifton Hill to Northcote & Preston Tramway Company,

The separate Clifton Hill to Northcote and Preston Tramway Company established one of the new cable lines as a separate entity, constructing the tracks along High Street from Dundas Street, Thornbury to Clifton Hill, where it met the MT&OC company line and opposite the Clifton Hill car shed (now a substation).⁶⁷

It is likely that the desire for a tramway extending from the existing MT&OC terminal at Clifton Hill, across the Merri Creek and up High Street, was formed from the group of local businessmen and council, seeing opportunities not only to promote their own business interests and sale of residential land in the northern suburbs, but also to emulate the financial success of the MT&OC cable tram system.

Those involved in the endeavour included Fitzroy Mayor and furniture manufacturer George Christian Clausen, the founder of the Northcote Brickworks David Clifton, land boomer (and association of politician Thomas Bent) Benjamin Josman Fink, and Australia's richest man Sir W. J. Clarke Bart. The company consulting engineer was Mr George Duncan and contractors were Charles Verso & Harry Knott.⁶⁸

However, the new line was built at the wrong time, coming at the height of the land boom, but just as the Depression descended on Victoria. Financial problems saw the line close for two years until Northcote council agreed to fund track maintenance at the rate of £200 per year. Trams began running again on 7 April 1894.⁶⁹



Figure 17: Fitzroy Northcote and Preston Depot at Preston – Charles Ottery with trowel laying the foundation stone, 16 May 1889. City of Darebin.

⁶⁷ Twentyman, A. E. 1971, 'The Northcote and Preston Cable Tramway', *Running Journal*, October 1971, Tramway Museum Society of Victoria; Lemon, Andrew 1983, *The Northcote Side of the River*, City of Northcote in conjunction with Hargreen Publishing Company, North Melbourne

⁶⁸ Graeme Butler, City of Northcote Urban Conservation Study, Volume One: Buildings And Structures 1983 p.11

⁶⁹ Public Records Office Agency VA 2693 - Duncan was also consulting engineer for the MTOCo and Melbourne Tramways Trust, John D. Keating, 'Duncan, George Smith (1852? - 1930)', Australian Dictionary of Biography, Volume 4, Melbourne University Press, 1972, p. 115.

The 2.25 mile line was mostly straight diverging slightly at Separation Street, where the road reserve switches sides on the Hoddle survey line. A more substantial curve at the southern end took the line south west to the north end of Queens Parade.⁷⁰

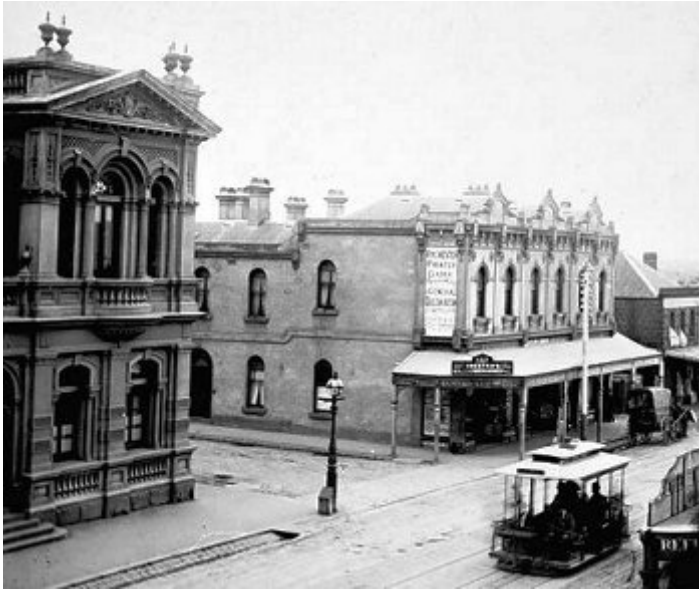


Figure 18: Cable tram passing Northcote Town Hall. Photograph TG Beckett (Museum of Victoria).



Figure 19: Clifton Hill & Preston cable trams, High Street Thornbury, looking south pre World War I. Darebin Historical Encyclopaedia, note car shed and engine house chimney on left

The steep climb up Rucker's Hill from Westgarth Street to Clarke Street had already been eased to some extent by the construction of an embankment (possibly as early as 1854). This was widened to accommodate the tramway in 1890.⁷¹

⁷⁰ Clifton Hill to Northcote and Preston Tram Company Limited correspondence re construction of cable tramway Royal Historical Society of Victoria Library. MS 000007; Box 8/4

⁷¹ Matthews, H.H. 'The Melbourne Cable Trams' *Australian Railway Historical Society Bulletin*, January 1941



Figure 20: Looking south on High Street Rucker's Hill embankment.

Construction was similar, but not identical to the MT&OCo system, with the cable tunnels being shallower possibly due to cost saving measures (a feature of the line's history). This later caused considerable extra expense to connect the two companies' systems. The rolling stock for the line was constructed at the MT&OCo workshops in North Fitzroy. Total construction cost was about £90,000., and the line opened on 18 February 1890. However, by 1892 the land boom had collapsed and many local businesses closed, including the Northcote Brickworks reducing income on the tramway.

By 1891 losses were mounting, resulting in the company ceasing trading on 7 July 1893 when the assets were seized by the E.S. & A. Bank. Poor forward planning was credited as the cause for the poor company's difficulties.⁷²

A new leaseholder, Patrick Pierce Kelly, reopened the line April 1894 when the Northcote council eventually agreed to fund track maintenance, but cost cutting saw the system run down and it soon closed again. The British Insulated Wire Company briefly planned to electrify the Northcote line 1898 (in addition to installing an electric tramways in Bendigo), but after paying a deposit and examining financial viability, it allowed the option to lapse.⁷³

Northcote Council eventually took over operation of the tramway itself, in response to considerable public pressure, and leased operation to a number of partnerships including Dynan and Goldsworthy, S.L. Dorum⁷⁴ and Meakin and Thomas before running the line themselves in the last year, when the MMTB took over all the municipal tramways in February 1920.⁷⁵

⁷² Russell Jones 2001-4. "Northcote: the on again, off again cable tramway", Friends of Hawthorn Tram Depot, <http://www.hawthorntramdepot.org.au/papers/northcote.htm> (losses amounted to £4,238 in 1891, increasing to £6,176 in 1892)

⁷³ The British Insulated Wire Company established the subsidiary Electric Supply Company of Victoria to undertake the Bendigo works, which bore fruit in 1903. "Articles of Association, Certificate of Incorporation and Agreements for Melbourne Electric Supply Company Limited and Associated Companies" Public Records Office, Series VPRS 9923.

⁷⁴ Dorum was one of the experts that F.B. Clapp brought out from America in 1885 to assist in the operation of the MTOC cable tramways. see Russell Jones, 'Northcote: the on again, off again cable tramway', <http://www.hawthorntramdepot.org.au/papers/northcote.htm>

⁷⁵ Twentyman, A. E. (1971) 'The Northcote and Preston Cable Tramway', *Running Journal* October 1971,



Figure 21: Clifton Hill Tram Terminus, State Library Victoria H36145/39

Prior to 1925, passengers had to walk between the Clifton Hill terminus (near the Terminus Hotel⁷⁶) and the north side of Merri Creek, but along with the construction of the new rail bridge, the tramway was extended so the Northcote cable tram linked directly to Clifton Hill without the necessity of change before the Merri Creek. This was one of a number of grade separation projects carried out on train and road crossings, which also eliminated the complex track and overhead wire conflicts created by level crossings.⁷⁷ The joined lines formed the longest cable tram route in Melbourne (previously a record held by the Brighton Road line). Northcote was also the final Melbourne cable tramline to close, on 26 October 1940.⁷⁸ The location of the Clifton Hill terminus is now notable for a tram/bus interchange and the 'Terminus Hotel', as well as the width of Queens Parade at this point.⁷⁹

⁷⁶ PTC drawings, 1279 25 0DI2, 1280 25 0DI4 MMTB Drawing P2213 17.7.1925; MMBW detail Plan 1265 1904.

⁷⁷ Robert Aquilina *A Brief History of the Fitzroy and Whittlesea Railway 1889-1959*

⁷⁸ Russell Jones 2001-4. "Northcote: the on again, off again cable tramway", Friends of Hawthorn Tram Depot; J Keating, *Mind the Curve: A History of Cable Trams*, Melbourne 1970, p. 141.

⁷⁹ The Northcote History Group, Northcote Timeline, compiled by P. Michell and typed by Charles Michell, <http://home.vicnet.net.au/~nhcs/Nhcs timeline.html>



Figure 22: looking towards interchange between Clifton Hill and Northcote cable trams c 1920. Source: PRO VPRS 12800 p3 ADV/0181

During World War Two, availability of replacement cable became an issue for the line – probably exacerbated by the particularly long cable runs required, and as a result, trams were replaced with buses. Wartime material shortages and finance constraints also delayed electrification of the line until 1955 creating what is now route 86. In the mean time, the road under the railway bridge at Clifton hill was lowered in 1940 to give more clearance for double decker busses.⁸⁰



Figure 23: Northcote engine house, High Street Northcote, under restoration 2010

⁸⁰ AE Twentyman, The Conversion of Melbourne's Cable Tramways, *Trolley Wire*, February 1978, pp.3-12

3.4 Private Municipal tramways

Melbourne's first electric tram was instigated in 1889 as a means of attracting prospective purchasers by a group of land developers in Box Hill. This was a short lived enterprise, but demonstrated the viability of electric traction, and also set the scene for the use of public transport as a means of serving the new suburban development away from existing railway lines. It was followed by a number of tramway companies and five municipal trusts set up by groups of entrepreneurs, local businessmen and municipal councils.

3.4.1 Box Hill to Doncaster tramway

In October 1888 a consortium of landowners and investors from adjoining shires of Nunawading and Bulleen, formed the Box Hill and Doncaster Tramway Company Limited. This company had an authorised capital of fifteen thousand pounds. William Meader became its chairman while R. F. Gow, was secretary of the Electrical Tramway Company. Mr. A. J. Arnot was superintending engineer of the Union Electric Company of Australia Limited, responsible for the installation design.⁸¹

The tramway commenced operations on 14 October 1889 and continued spasmodically until January 1896, running between the Box Hill Post Office, on the corner of Whitehorse Road and Station Street, and a terminus near the intersection of Elgar and Doncaster Roads, Doncaster.⁸²

In 1888-9, the Centennial International Exhibition, held at the Exhibition Buildings in Melbourne (potentially creating an interesting archaeological site if the location of the track can be determined). One of the most popular attractions was an electric tramway running on a short 300-yard (274 metre) length of track which carried nearly seventeen thousand passengers. The tramway was exhibited by the electrical importer W.H. Masters and Company. The suppliers of the tram equipment, Thomson-Houston Company of Boston, were awarded a First Order of Merit and a Gold Medal by the Exhibition Commissioners.

Seeing the opportunity for both a promotional gimmick for attracting land purchasers, and a practical means of getting people to the otherwise isolated location as well as potential to attract more tourists to the area, the Box Hill and Doncaster Tramway Company purchased the electric tram, generating dynamo and steam engine from the Centennial Exhibition and let a contract for construction of 2.25 miles (3.6 kilometres) of earthworks and track. Second-hand rails from Tasmania were used for the standard gauge line.

The other local attraction, the Doncaster tower, was also created as a land boom promotion. While Box Hill, previously an area of orchards and farms, and a market town for the surrounding area, was booming and well serviced by the railway line opened in 1882, Doncaster located on a high ridge providing views and a healthy atmosphere, but lacking a railway was not an ideal area for land speculation.

The Union Electric Company of Australia Limited was engaged to erect overhead wiring, install the power generating equipment and operate the line for a period of six months, while tracks were laid through the syndicate's paddocks from Whitehorse Road to the north, over Koonung

⁸¹ The Argus 15 October 1889 Page 7

⁸² Green, Robert, 1989, *The First Electric Road: a History of the Box Hill and Doncaster Tramway*, John Mason Press, East Brighton, Victoria.

Creek, and up the steel slope to Doncaster, Some locals objected to the tramway on the grounds that it would supplant the need for a railway to Doncaster and bring 'undesirable tourists'.



Figure 24: Advertising poster for Box Hill-Doncaster tramway, circa 1892-1896. Poster from the FOHTD collection.



Figure 25: Doncaster Tower, Thiele, Henry Doncaster-Templestowe Historical Society. DP0056

The combined engine house and tram shed was erected on the south bank of Bushy Creek (just north of the present Wimmera Street), and a dam on the creek provided water for the steam-powered electricity generating plant.

The line was opened on 14 October 1889 by a local Parliamentarian and Government Whip, Ewen Cameron, MLA., with the usual lavish ceremony at the Tower Hotel, Doncaster. An initial profit of fifty-eight pounds by the time the Union Electric Company handed over the operation of

the line to the tramway company, led to a second tram being ordered from the Thomson-Houston Company.⁸³

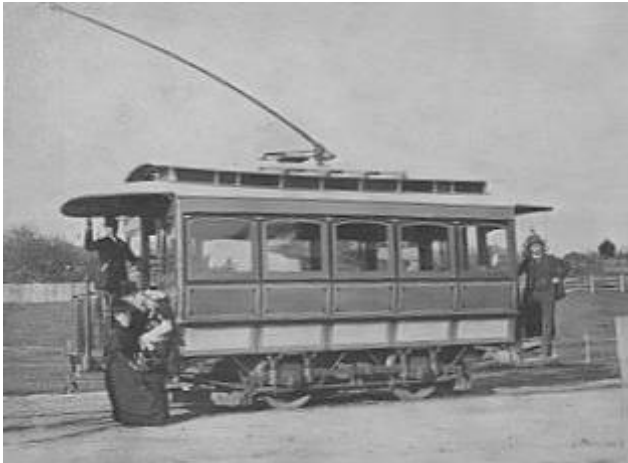


Figure 26: Box Hill and Doncaster Tramway Company tramcar No 2. La Trobe collection, State Library of Victoria.

However, the line soon experienced difficulties due to the steep gradients and sharp curves taxing the underpowered electric car leading to breakdowns. Relations with the South Doncaster Estate Company Limited, through whose land the line crossed (just north of Whittens Lane) also soured, and led to a protracted period of claim and counter claim, sabotage of the line and legal suit. This drove the company to attempt to sell up in December 1890, but negotiations allowed a resumption of services a couple of months later. Financial difficulties continued and in April 1891, the English, Scottish and Australian Chartered Bank successfully sued the Tramway Company for recovery of some five hundred pounds, while employees also obtained judgements against the Company for non-payment of wages leading to the sale of the trams and equipment and the Company going into voluntary liquidation.

George Thomson was the purchaser, who, through his agent William Ellingworth, ran the line for a while until a dispute with the South Doncaster Estate again stopped operations. Thomson sold his interest to Richard Serpell of Doncaster, who managed to resolve the deadlock over the right of way, agreeing to transfer the right of way to the newly created Shire of Doncaster free of charge providing it was declared a public road. This resulted in the creation of Tram Road, which was gazetted a public highway in November 1901, and is probably the only instance of a road in Melbourne having been created as a dedicated tramway.

In February 1892 the tramway was recapitalised under a new company, the Doncaster and Box Hill Electric Road Company Limited, and improvements made to the track and running gear, while Henry Hilton was appointed manager.⁸⁴ Some success followed, with the tourist potential widely advertised.

However, the deepening Depression saw a decline and during Easter 1893 the Tramway Company's bank suspended business. Henry Hilton continued to operate the line privately, with his cousin William Hilton, but he closed the tramway for good, on 6 January 1896. The overhead wires and tracks were soon removed – stolen or scrapped, while the old tram shed and engine house at Bushy Creek survived for a while. By the Second World War, only the dam and

⁸³ Green 1989, *Australia's first electric tram*

⁸⁴ Hilton later appears as an inspector with the NMETL (see J Richardson 1963, *The Essendon Tramways*)

foundations for the engine house equipment remained. The terminus site near Box Hill Post Office was marked by a cairn in 1940 until demolished by vehicle in 1988 and in 1971 a right of way behind the Post Office was named Hilton's Lane. In October 1989, on the tramway's 100th anniversary, the plaque from the cairn was reinstated in Station Street and new plaques commemorating the centenary unveiled. A full size replica of the first tram is on permanent display at the Doncaster-Templestowe Historical Society's museum at Schramm's Cottage, Doncaster.

3.4.2 North Melbourne Electric Tramway & Lighting Company Ltd.

At the turn of the twentieth century, Essendon was a relatively prosperous residential suburb about five miles north west of the centre of Melbourne. From origins as a stopping place on the gold fields route, by 1909 it had grown to over 20,000 residents when it became a City.⁸⁵ The Melbourne and Essendon Railway had been opened in October 1860 to serve the growing suburb, but languished and eventually closed in July 1864. It was bought by the government in 1867, but not reopened until 1871, and shortly after the North East Railway was built from Essendon to Wodonga.

The cable tram route was built along Flemington Road to near Racecourse road in 1890, terminating at Flemington Bridge on Moonee Ponds Creek. 'Albert Cabs' provided a service along this route previously, and although there was a proposal for a motor bus service in 1900, lack of funds saw it quickly collapse. A proposal was submitted to the Essendon Council on 4 June 1888 by Messrs. Booth, Ellson and Co., to build an electric tramway from Flemington Bridge to North Essendon and along Buckley Street and Mount Alexander Road. Unfortunately for Essendon travellers, nothing more was heard of this scheme.

The Essendon Land, Tramway and Investment Company proposed its scheme at the height of the Land Boom. Incorporated in 1888. The company proposed to construct a tramway from Essendon Station along Buckley Street to the Keilor Boundary, which gained approval from the Council. It purchased 1875 acres at £223 per acre, and alleged that nearby land had sold for £1,800 at auction. Its prospectus has been described as an illustration of the art of deception. Sales were faked to create high market prices. This firm reported that 3200 shares had been 'taken up privately, the names of the shareholders being a sufficient guarantee that this is a genuinely good investment'⁸⁶

A E Morgans, a Western Australian mining investor, politician and briefly WA Premier, was seeking opportunities for investing in tramways, evidently having had success with systems in the Western Australian Towns of Perth and Kalgoorlie. He sent a Mr Rodgers to Melbourne to look for prospects. An initial proposal for a line from Port Melbourne to Beaumaris was blocked when the Melbourne Tramway & Omnibus Company refused to forgo its (unused) rights over part of the route. The story goes that Rogers mentioned the plan to the Flemington businessman W Pridham in the interval of a bowling match, and as a result was invited to inspect the district in the company of the mayor, Cr A E Young and the Town Clerk W Cattanach.⁸⁷

⁸⁵ Aldous Grant 1988, *The Stopover that Stayed A History of Essendon*. Essendon Bicentennial Community Committee.

⁸⁶ John C Weaver, A Pathology of Insolvents: Melbourne, 1871-1915 Australian Journal of Legal History [2004] 5

⁸⁷ Richardson, J. 1963, *The Essendon Tramways*, p.7; William Cattanach later played a significant role in the State Rivers and Water Supply Commission, having been appointed by Thomas Bent in 1906.

The tramway was built, owned and operated by a private company, the North Melbourne Electric Tramways and Lighting Company, which was floated in Britain, and was interested in selling electricity to customers along the route using the overhead wires as a distribution system. This was the same motive that led to the establishment of the Ballarat, Bendigo, and Geelong electric tram systems. Despite its name, the tramway run by this company was almost entirely within the City of Essendon and Borough of Kensington-Flemington. In October 1905 the Municipal Districts of the Town of North Melbourne and the Borough of Flemington and Kensington were united with the City and constituted and formed into Hopetoun Ward. The use of the name Melbourne was probably used to encourage British promoters to invest in the scheme.⁸⁸

The Victorian Railways Commissioners strenuously opposed Morgans' and Rogers plan for two electric tram routes from Flemington Bridge to Maribyrnong and North Essendon, believing that they would 'skim the cream' off their traffic. Despite the urgent representation of the Essendon and Flemington Councils, the state Cabinet refused to sanction the tramways. When it was pointed out that the tramways would feed the railways at four points, the commissioners presented a rival proposal for railway-owned busses to operate on the same routes.⁸⁹

A protest meeting accused the Irvine ministry of '...pursuing a policy of monopoly, conservatism and stagnation...dog-in-the-manger spirit which sought to strangle private enterprise and aim cowardly blows at municipal activities...incapable of shaping the destinies of a progressive country.'⁹⁰

When the Irvine government fell, the new ministry under Thomas Bent took a more favourable view and the Minister for Public Works inspected and approved the proposed routes.⁹¹ A referendum of ratepayers voted in favour of the trams 2874 to 146.⁹²

Morgans transferred his rights to a company formed in England with a capital of £200,000 and known as the North Melbourne Electric Tramways and Lighting Company Limited, but also described in other documents as the North Melbourne Electric Light and Traction Company, but generally known as the Essendon Tramways. Sir Alexander Peacock MLA, was appointed as local Managing Director. The company was given the right to run tramways on certain lines and supply electricity for 30 years, at the end of which the undertaking was to revert to the municipalities who were required to purchase the land on which the car barn and power house stood. Options to purchase the system in 10, 20 or 25 years were also included in the agreement. The 10 year break was timed to coincide with the planned acquisition of the cable tramways by the Melbourne City Council and other municipalities in 1915. As early as 1905, it was anticipated that the cable lines would eventually be electrified.⁹³

The foundation stone for the power station was laid at a ceremony on 24 May 1905, with the Mayor of Essendon Cr Showers and Flemington Cr Raisbeck officiating. Elaborate celebrations followed with refreshments provided in two large marquees. The first rail was laid (at the

⁸⁸ The History of the Essendon tramways has been researched and published by Richardson several decades ago Richardson, J. 1963, *The Essendon Tramways*, Traction Publications. Canberra, and more recently by Russell Jones, 2006, *A brief history of the North Melbourne Electric Tramways & Lighting Company*, Tramways Museum Society of Victoria, <http://www.tmsv.org.au/papers/nmetl.htm>.

⁸⁹ Richardson, J. 1963, *The Essendon Tramways*, p.8

⁹⁰ Quoted in Richardson, J. 1963, *The Essendon Tramways*, p.8

⁹¹ Richardson, J. 1963, *The Essendon Tramways*, p.8

⁹² 11 May 1904, Government Gazette p.1425, 14 December 1904, Government Gazette p.3993

⁹³ Richardson, J. 1963, *The Essendon Tramways*, p.9

western end of Racecourse Road) a month later in another ceremony presided over by the Premier, Mr Bent.

On the evening of the 3rd July 1906, three torchlight processions departed from the main retail streets in the Essendon District, Union Road, Puckle Street and Racecourse Road. They converged on the tramways car barn in Mount Alexander Road, with the Essendon town Band, 6th Australian Infantry Regimental band, fire brigade, sports teams, motor cars, cyclists and tramway trailers. A promenade concert took place in the car barn with local ladies providing refreshments at three pence per item. The main attraction however, was that the concert was illuminated by electricity. Unfortunately the hired dynamo fused shortly after the program started and management had to revert to hurricane lamps and torches.⁹⁴

The service was opened on Thursday 11 October 1906 with yet more ceremonies. A little after 2p.m the Lord Mayor of Melbourne and his party arrived at the car barn, The Lady Mayoress drove the first car to Essendon town Hall where speeches were made, and then the Mayoress of Essendon drove the car to the Saltwater River terminus followed by a large party in the other cars. A marquee was provided near the terminus for more speeches, toasts and refreshments.

The Essendon tramway depot was constructed in 1906 to house the fleet of tram cars and trailers, and provide maintenance and office space. The gable roofed car shed was designed by Ussher and Kemp architects,⁹⁵ and built by George Meyer of Ascot Vale, and is the only extant part of the original depot. The tram depot building was 200 feet long and 68 feet wide, had six roads and could store 28 tramcars under cover. The company offices were located in a modest two-storey building alongside the entry track to the depot.

⁹⁴ *Essendon Gazette*, 9 August 1906, description provided by Marilyn Kenny.

⁹⁵ The Melbourne-based partnership of Ussher & Kemp had a major influence in development of the 'Federation' style of domestic architecture, sometimes known as the 'domestic Queen Anne' style. The firm was notable for designing a number of buildings across Victoria, besides their work on Essendon Depot, and several of these buildings have been placed on the Victorian Heritage Register. Some examples of their work are: Professional Chambers, 110-118 Collins Street, Melbourne Dalswraith, 99 Studley Park Road, Kew Napier Club, 34 Thompson Street, Hamilton Kwarau, 405 Tooronga Road, Hawthorn Murndal, Murndal Road, Hamilton



Figure 27: The first tram driven from the powerhouse to Saltwater River terminus by the Mayoress, photo: Essendon Historical Society.

The power station was a large brick building, 90 feet by 63 feet, adjacent to the tram depot. It was also designed by architects Ussher & Kemp of Melbourne. It contained three 360 hp steam engines manufactured by Browett & Lindley of Manchester. Steam was supplied by three Babcock & Wilcox water-tube boilers. In order to reduce water consumption a fifty-foot high cooling tower was constructed at the rear of the engine house, to condense exhaust steam from the engines.

The engines provided direct drive at 350 rpm, powering three General Electric 250kW generators producing electricity at 350 volts. The British Thomson-Houston Company supplied controlling switchgear, consisting of three generator panels, two traction feeder panels, four lighting panels and one 'Board of Trade' panel.⁹⁶

The tramway commenced at Flemington Bridge, on the north side of Moonee Ponds Creek with a gap of about 100 metres to the terminus of the Cable Tram, requiring patrons to walk between. A quarter of a mile (400m) north of the terminus, the Saltwater Line turned into Victoria Street to Racecourse road, passed Newmarket Station and into Epsom Road, crossing the Racecourse Branch line on a level crossing, then ran up Union road through Ascot Vale before turning into Maribyrnong Road for the last run to the River.

⁹⁶ Richardson, J. 1963, *The Essendon Tramways*, pp.10-12

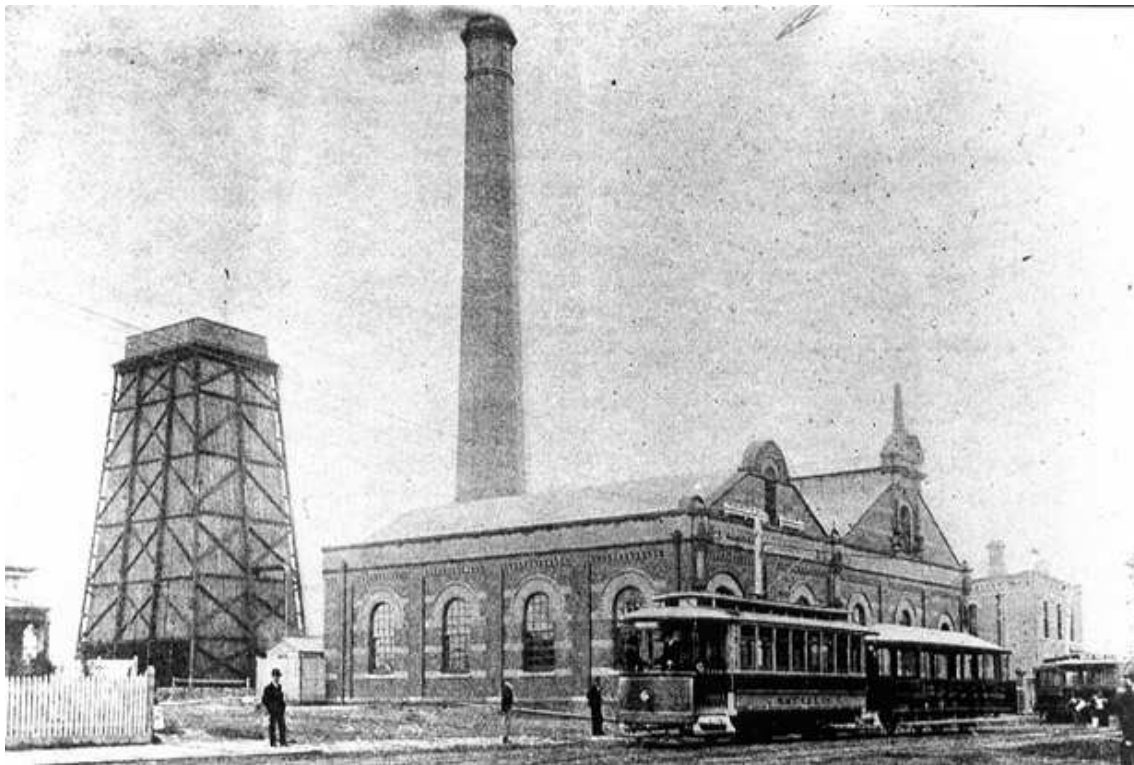


Figure 28: NMETL powerhouse and offices with Saloon motor car No 9 with trailer outside,⁹⁷

The North Essendon Line was 3 ½ miles from Mount Alexander Road, with double tracks as far as Puckle Street Moonee Ponds, where a short single track spur ran to Moonee Ponds Station. The line from Moonee Ponds Junction, had a number of crossing loops. It turned into Pascoe

⁹⁷ photos: K.S. Kings Collection & <http://www.walkingmelbourne.com/forum/viewtopic.php?f=11&t=275&start=42>

Vale Road, and went along Fletcher Street, before going back on to Mount Alexander Road to the terminus at Keilor Road.

The tracks were laid using concrete stringers and 90 lb per yard rails in 30 foot lengths. Tie bars were spaced 7 feet 6 inches apart and double bonds made at all joints to ensure good negative return. The rails were laid in trenches, supported to the correct height by temporary packing. Concrete was then rammed in the trenches up to the height of the foot of the rail, and once it had set, the road surface was reinstated with conventional bluestone macadam. Special work (points and crossings) was of toughened cast steel, and supplied by Hadfield's of Sheffield and Lloyd's of Darlaston.⁹⁸

The overhead wires were supported by a mix of centre poles and span poles, depending on location. Poles were 30 feet long and were generally of ironbark and grey box timber, set six feet into the ground. Steel poles were used in lieu of timber in Puckle Street and around the Essendon Town Hall.⁹⁹

The only change to operations came with the passage of the Flemington Road Tramways Act 1911 (No.2333), which provided for the construction of a branch tramway across Flemington Bridge so that the terminus was adjacent to the cable tram. The works were undertaken in 1913, with the major engineering required to reconstruct the 1868 cast and wrought iron 'Mains Bridge' in order to take the heavier loads and provide sufficient width for trams and cars. John Monash's reinforced concrete and Monier Pipe Co undertook the work, with Monash himself designing the complex alterations which shifted the central girders to the outer part of the bridge and constructed new reinforced concrete girders down the centre to take the greater loads of the trams.¹⁰⁰

3.4.3 Prahran and Malvern Tramways Trust

The creation of electric tramways in the suburbs of Melbourne was initially a response to the inadequacy of public transport provided by the heavy rail system (where by the turn of the twentieth century suburban and settlement and commercial development had expanded to fill the space between existing lines) or the existing cable tram network (which ended about four miles (6.4 km) from the city), while horse-drawn omnibuses were slow, expensive to operate and increasingly considered unhygienic due to the amount of manure produced in the streets.¹⁰¹

The perceived success of the North Melbourne Electric Tramway & Lighting Company's line from Flemington Bridge to Saltwater River and Essendon gave local people the impetus for campaigning for similar services in their own municipalities. Responding to community needs, tramway trusts were established to promote commercial and residential development in the municipalities by the provision of cheap, reliable and attractive public transport, and indirectly increase the municipal rates levied by the councils. This was also in the interest of many of the councillors, who often were involved in real estate development of their local areas. As a consequence, lines were often developmental in nature, intended to produce revenue in the long term, but more directly to encourage development along the lines.

⁹⁸ Richardson, J. 1963, *The Essendon Tramways*, pp.10-11

⁹⁹ Richardson, J. 1963, *The Essendon Tramways*, pp.10-11

¹⁰⁰ 11 May 1904, Government Gazette p.1425, 14 December 1904, Government Gazette p.3993; Vines G. Flemington Bridge Classification Report, 2004 National Trust of Australia (Victoria).

¹⁰¹ See Joel Tarr and Clay McShane, "The Centrality of the Horse to the Nineteenth Century American City," in Raymond Mohl, ed., *The Making of Urban America* (New York: SR Publishers, 1997), pp. 105-30. See also Ralph Turvey, "Work Horses in Victorian London" at www.turvey.demon.co.uk.

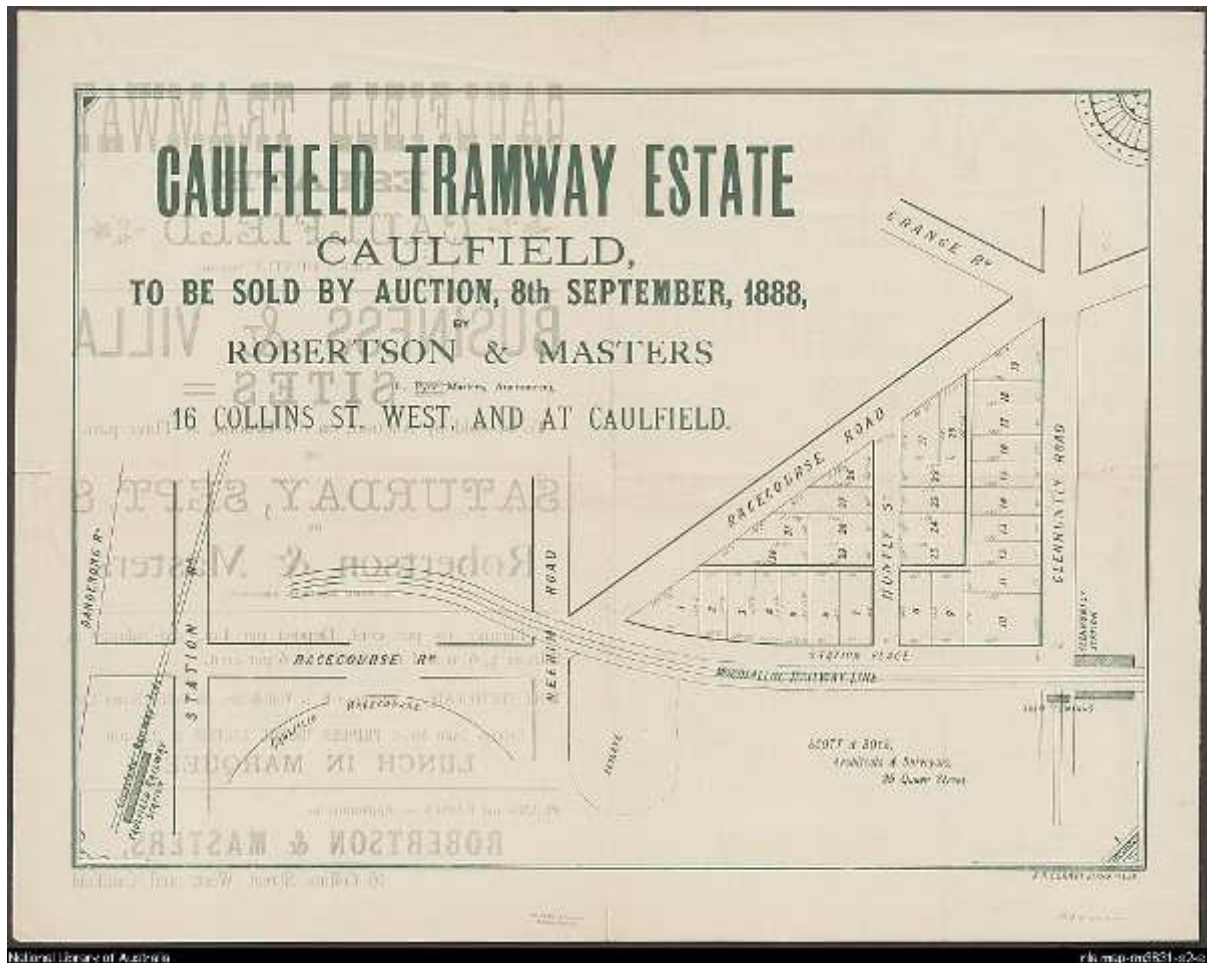


Figure 29: Robertson & Masters, Caulfield Tramway Estate, Caulfield: to be sold by auction, 8th September, 1888, by Robertson & Masters. 1888. MAP RM 3631. Part 2.

The Prahran & Malvern Tramways Trust (P&MTT) was by far the largest of the independent electric tramways formed in the early twentieth century. It went on to have a dominating role in the Melbourne & Metropolitan Tramways Board (MMTB) when it took over operating most of the Melbourne tramway systems in 1920, partly because the Chairman of the MMTB until 1935 was Alex Cameron, who had been Chairman for most of the P&MTT's existence.

Some opposition to the tramways came from the Commissioners of Victorian Railways who saw it as competition which would siphon off railway passengers. Despite the railways providing a steam omnibuses service between Prahran railway station and Malvern town hall for a short period, the railways were not able to quell the demand for improved public transport.

Malvern Councillor Alex Cameron persuaded the conservative Bent government to pass legislation to establish a municipal tramway with the support of local conservative and liberal members Thomas Luxton MLC (also a Prahran councillor), Donald Mackinnon MLA and Norman Bayles MLA. Cameron was elected Chairman of the Trust, and two councillors from each of Prahran and Malvern councils were appointed as members, including Luxton as one of the Prahran representatives.

Legislation in 1907 incorporated the Prahran & Malvern Tramways Trust with a further bill in 1910 initiated to include representatives of St Kilda and Caulfield Councils. The Trust consisted of five members, one each from the four constituent councils and the Chairman.¹⁰²

Construction began on 20 October 1909 on the High Street line from Charles Street, Prahran to Tooronga Road, Malvern, and a branch from this line south along Glenferrie Road and Wattletree Road, to Burke Road. The track was laid with 90lb at the NSW and British heavy rail standard gauge of 4'8½" using grooved rails on sleepers, ballasted with blue-metal and surfaced with tarred macadam and tarred rolled screenings. The depot, offices and workshop were constructed off Glenferrie Road Malvern accessed by a Coldblo Road.¹⁰³



Figure 30: Opening of the Prahran and Malvern Tramway at Malvern Depot, 30 May 1911 showing the traffic office building required for the massive expansion of the system (photo City of Stonnington)

Electricity was supplied by the privately operated Melbourne Electrical Supply Company from its Richmond power station, transmitted to the substation at the rear of the Coldblo Road depot, at 4000V AC where it was converted to 600V DC by rotary converters. The Substation was later expanded in Rusden Street. At this time, there was no State Electricity Commission or co-ordinated power supply, although there were private and municipal power generators and the Victorian Railways would soon build the Newport Power Station in 1918 to provide for the electrification of the suburban railway system.¹⁰⁴

On 30 May 1910 the Trust was operating its first two lines for traffic using thirteen single truck California combination cars built in Adelaide by Duncan & Fraser, painted in a chocolate and cream livery.

Further extensions were made to the tram system by bringing in the Councils of Kew and Hawthorn in 1913 and Camberwell in 1915. Once the initial success was seen by surrounding councils, they became interested in joining the trust. The Kew Tramways Act 1914 empowered

¹⁰² Prahran & Malvern Tramways Trust Act, 1910 (No.2294), Act 1907 (No.2130),(conferred on the Councils under the provisions of the Tramways Act, 1890 and 1915.)

¹⁰³ Russell Jones, 2008, Steady as she goes: the Prahran & Malvern Tramways Trust, Friends of Hawthorn Tram Depot <http://www.hawthorntramdepot.org.au/papers/P&MTT.htm>

¹⁰⁴ Edwards, Cecil - *Brown Power; A Jubilee History of the State Electricity Commission of Victoria*

the municipality of Kew to acquire from the Melbourne Tramway & Omnibus Company the lease and assets of the Kew horse tramway. This was to be converted to an electric tramway, and extended along High Street to Harp Road, East Kew.¹⁰⁵

The Kew Tram Depot was constructed by the P&MTT in 1915, along with a substation, offices and three shops along the Barkers Road frontage to obtain revenue. Other shops were erected by the Trust in instances where they required land for road realignments, such as the two storey shop and dwelling at the corner of Malvern and Burke Roads built on residual land in 1915.¹⁰⁶

A number of new lines and extensions to existing lines were constructed by the Trust between 1911 and 1917 including services along High Street, Dandenong Road, Wattle Tree Road, Balaclava Road, Cotham Road, High Street Kew, Hawthorn Road, Glen Huntly Road, Waverly Road, St. Kilda Road, Glenferrie Road, Malvern Road, Barkers road Kew, Whitehorse Road and Burke Road. A characteristic of the Prahran and Malvern trust lines, was the use of centre road poles cantilevering the lines on either side. These were later replaced with overhead wires attached from poles on the sides of the roads, or the fronts of buildings in some cases. The centre road poles only survived in a few places such as St Kilda Road and Dandenong Road, where the tramway ran in its own reserve.

The trust was also involved in a number of related commercial ventures designed to enhance the value of its business, but also provide public amenity. In Central Park in Malvern, a substantial kiosk and band stand were constructed and the kiosk was leased by the P&MTT and sublet to a private operator.

Most of the rolling stock for the tramway was purchased from Duncan & Fraser in Adelaide. However, the P&MTT also constructed some of its own tramcars at its Coldblo Road workshops during 1916-17 establishing a process later continued by the MMTB. These became the large MMTB-built car shed. Other facilities for storage of materials and manufacture of tar were provided at Road, near Glenferrie Road, and at the Flinders Street Extension respectively.¹⁰⁷

The onset of the First World War delayed further expansion although a investigations had been undertaken in 1915 for potential new lines and extensions across a broad area of south-eastern Melbourne. By 1916 the Hawthorn Tramways Trust (HTT) had constructed its own tramway system which, while being entirely separate, actually crossed the P&MTT network. A 1918 agreement allowed the connection of the two system to allow moving trams between routes, via the laying of a section of track around the corner of Riverdale and Glenferrie Roads, although this was not used until after the takeover by the MMTB.

The takeover of the P&MTT by the MMTB occurred when the tramways were perhaps reaching their maximum expansion under the existing organisational system, as the logic of separate municipal based trusts did not fit with the growing and soon-to be interconnected network.

¹⁰⁵ Russell Jones, 2008, Steady as she goes: the Prahran & Malvern Tramways Trust, Friends of Hawthorn Tram Depot <http://www.hawthorntramdepot.org.au/papers/P&MTT.htm>

¹⁰⁶ P&MTT Quarterly Report to 30/06/1914 Quarterly Report to 31/12/1915, copies provided by Robert Green.

¹⁰⁷ Notes provided by Robert Green citing P&MTT Minute books 1910, and Annual Report 1921

3.4.4 Hawthorn Tramways Trust

The Hawthorn Tramways Trust commenced as an entity in 1914 with the acquisition and electrification of the Hawthorn horse tramway that ran from the Yarra River at Bridge Road to Auburn Road. It also built new electric lines from Princes Bridge to Burwood and Wattle Park.

The Hawthorn Tramways Trust was constituted and incorporated under the provisions of the Melbourne to Burwood Tramways Act, 1914 (No.2488) on 17 February 1914, which provided for the “...construction and management of certain electric tramways in the municipal districts of Melbourne, Richmond, Hawthorn and Camberwell and for the acquisition of a horse tramway from the Melbourne Tramway & Omnibus Company Limited...”



Figure 31: Logo of the Hawthorn Tramway Trust

The Trust consisted of nine members, two from each the constituent Councils and the Chairman, with the first meeting held on 19 June 1914. The Melbourne to Burwood Tramways Act, 1915 (No.2605) further increased the borrowing powers and conferred further powers on the Hawthorn Tramways Trust. The Chairman was elected by a conference of the Councils of the municipalities for a period of four years. In the event of a vacancy, the Minister of Public Works could appoint some person to that position. Like the P&MTT, the Hawthorn Trust therefore operated under some oversight from state government.

Hawthorn Tramways Trust lines were constructed as follows:

- Princes Bridge to Burwood opened to Depot April 1916,
- Wallan Road and Power Street, Hawthorn from Depot to Auburn Road, Hawthorn May 1916
- Auburn Road, Hawthorn to Bowen Street, Camberwell May 1916
- Bowen Street, Camberwell to Boundary Road, Burwood June 1916
- To Power Street, Burwood June 1916
- Riversdale Road Extension from Burke Road, Camberwell along Riversdale Road to Boundary Road, Burwood - 23 December 1916.¹⁰⁸

As part of establishing its Tramway system, the HTT erected their American Romanesque-style depot at Power Street and Wallen Road, Hawthorn, which was opened on 6 April 1916. The

¹⁰⁸ Hawthorn Tramways Trust, Public Records Office VA 2978

original brick building included offices, a substation and a four-track car shed. A second car shed was added in 1917. The system was designed by F A McCarty of McCarty & Underwood, who also designed the FN&PTT and the FTT systems. A workshop and store was below the second shed while a separate building housed a horse-drawn tower wagon used to maintain the overhead tram wires.¹⁰⁹

The HTT network was relatively small, compared to the P&MTT, having only a handful of lines mainly radiating from the Wallen Road depot which was reached from the city along Swan Street and then their lines spread out to High Street and Cotham Road in Kew, Riversdale Road and Camberwell Road to Burwood.

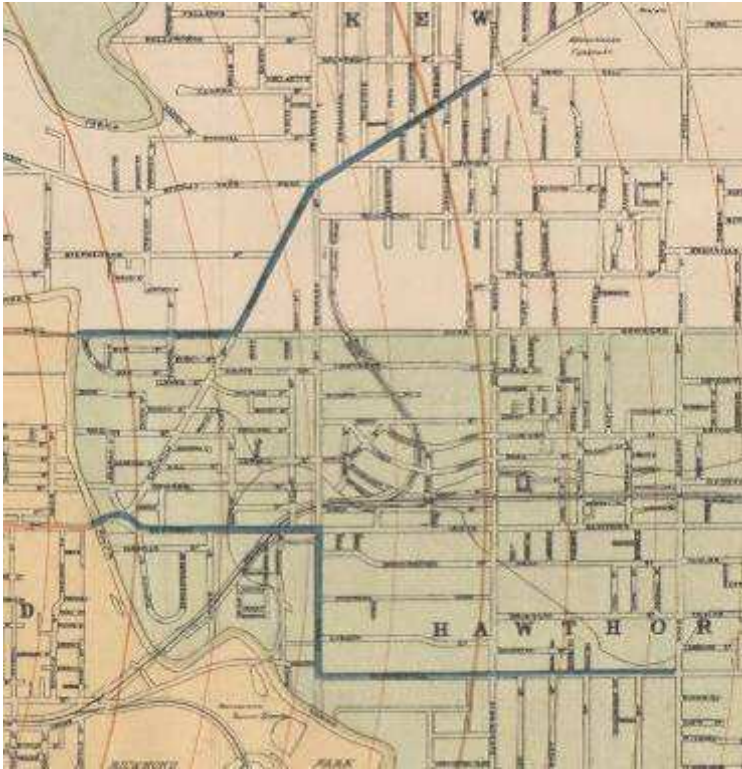


Figure 32: Plan of Kew and Hawthorn horse tram routes

In 1915, the Hawthorn Tramways Trust purchased 137 acres of then rural land from Mrs Eliza Welch for £9,000 on the condition that it was to be used as a public park. They proposed to call it 'Metropolitan Tramways Park' but the name was soon changed to Wattle Park. In addition to the civic responsibility that the Trust was showing (probably in the capacity as a facility of the local councils), it was seen as a means of generating additional patronage at the terminus of the Riversdale Road Extension, particularly in opposite direction to the commuting traffic and in off peak time and weekends. The park was formally opened on 31 March 1917, but was not substantially developed until the 1920s after the MMTB took over.¹¹⁰

¹⁰⁹ Russell Jones, 2008, Steady as she goes: the Prahran & Malvern Tramways Trust, Friends of Hawthorn Tram Depot <http://www.hawthorntramdepot.org.au/papers/P&MTT.htm>

¹¹⁰ Melbourne to Burwood Tramways Act, 1915 (No.2) (Act No.2815, 30 December 1915)



Figure 33: Promotional map for Wattle Park line (State Library Victoria)

The Melbourne and Metropolitan Tramways Board added a tram driver instruction school in 1925. The school was superseded by a larger training facility on the site in the 1960s. Between 1940 and the early 1990s, the eastern end of the building's top floor was also used as a workshop for making tramway uniforms. During the late 1940s, the original brick facades of the car sheds were demolished to allow access for wide-body trams and the main entrance of the office section was later removed for road widening. The building stopped operating as a tram depot in February 1965.

3.4.5 Melbourne, Brunswick & Coburg Tramways Trust

The Melbourne, Brunswick & Coburg Tramways Trust was created once municipal tramway trusts were already a proven formula and while it was only in operation as a separate entity for six years, it managed its seven miles of tram routes more efficiently than some other concerns.¹¹¹

The Northern Tramway Company which operated the Sydney Road horse tram was a victim of the Depression, being dissolved in 1894 and while the tram continued spasmodically for a few more years it was eventually taken over in 1911 by the Coburg Council setting the scene for a potential municipal tramway trust.¹¹²

Meetings of local businessmen, residents and councillors were held in both Brunswick and Coburg, which resolved to petition for suitable legislation to allow the formation of a Brunswick and Coburg Tramways Trust, which was approved by the State Government in February 1914.¹¹³ The Chairman of the Trust was former Coburg Mayor Thomas O'Loughlen Reynolds with former Coburg Town Clerk and Treasurer Charles Andrews as Secretary and Struan Robertson

¹¹¹ Russell Jones, 'Penny fare to Pentridge: the Melbourne, Brunswick & Coburg Tramways Trust' Friends of Hawthorn Tram Depot, <http://www.hawthorntramdepot.org.au/papers/mbctt.htm>

¹¹² Prentice, R. H. 'A Brief History of the Melbourne, Brunswick and Coburg Tramways Trust' in Running Journal July 1966, Tramway Museum Society of Victoria

¹¹³ Brunswick and Coburg Tramways Act 1914 (No.2484)

as Engineer. Roberson had some experience with electricity matters having been Electrical Engineer at the State Coal Mine and before that an engineer in New Zealand..



Figure 34: MBCTT No 8 in Sydney Road, near Bell Street. (Coburg Historical Society)

Construction was planned for a new line along from near the Rathdowne cable tram terminus, heading up Lygon Street and Holmes Road turning west into Moreland Road and then again north along Sydney Road to Bakers Road. A branch line ran up Nicholson Street to Bell Street.¹¹⁴

Probably with a mind to attract passengers from closer to the city the Trust was enlarged by the inclusion of the City of Melbourne, forming the Melbourne, Brunswick & Coburg Tramways Trust (MBCTT).¹¹⁵ The Tram was then extended south down Lygon Street to Elgin Street, turning into the northern end of Swanston Street and south to the cable tram terminus at Queensberry Street. Although not specifically stated, the routes had the benefit of drawing traffic to both the Melbourne and Coburg cemeteries, Melbourne University and at the other end, Pentridge Prison.



Figure 35: MBCTT construction in Sydney Road. (Coburg Historical Society)

Some different construction techniques were employed, including welding rails and careful construction of the road bed using bricks while instead of using poles in the centre of the road as was common on many other electric tramways, overhead wires were suspended between pairs of roadside poles supplied with electricity from the Melbourne City Council Electric Supply

¹¹⁴ Crowley, V.J. (1915), Report on Proposed Tramway for the Melbourne, Brunswick & Coburg Tramways Conference

¹¹⁵ Melbourne, Brunswick and Coburg Act, on 26 Oct 1914 amending Act (No.2541)

Department. The depot with a capacity for 20 tramcars, substation, store, workshops and offices near the corner of Moreland Road and Nicholson Street, Coburg were erected by Robert Irvine.

The tramway commenced operations in 1916 in the central section and was progressively expanded during the year with first the Sydney Road from Moreland Road to Bell Street in operation in April, followed by the section to Bakers Road by May, the southern end to Park Street in August and the Nicholson Street Branch and Park Street to Queensberry Street section in October. The official opening ceremony was presided over by the Minister for Public Works, the Hon. W. A. Adamson MLC.



Figure 36: Brunswick-Coburg Tramway opening ceremony, 31 October 1916. (Coburg Historical Society)

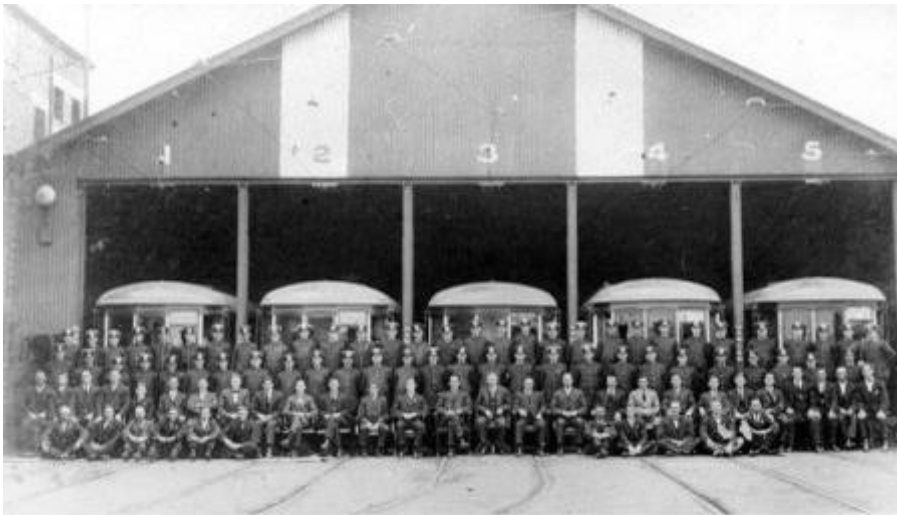


Figure 37: MBCTT staff photograph 1918. (Coburg Historical Society)

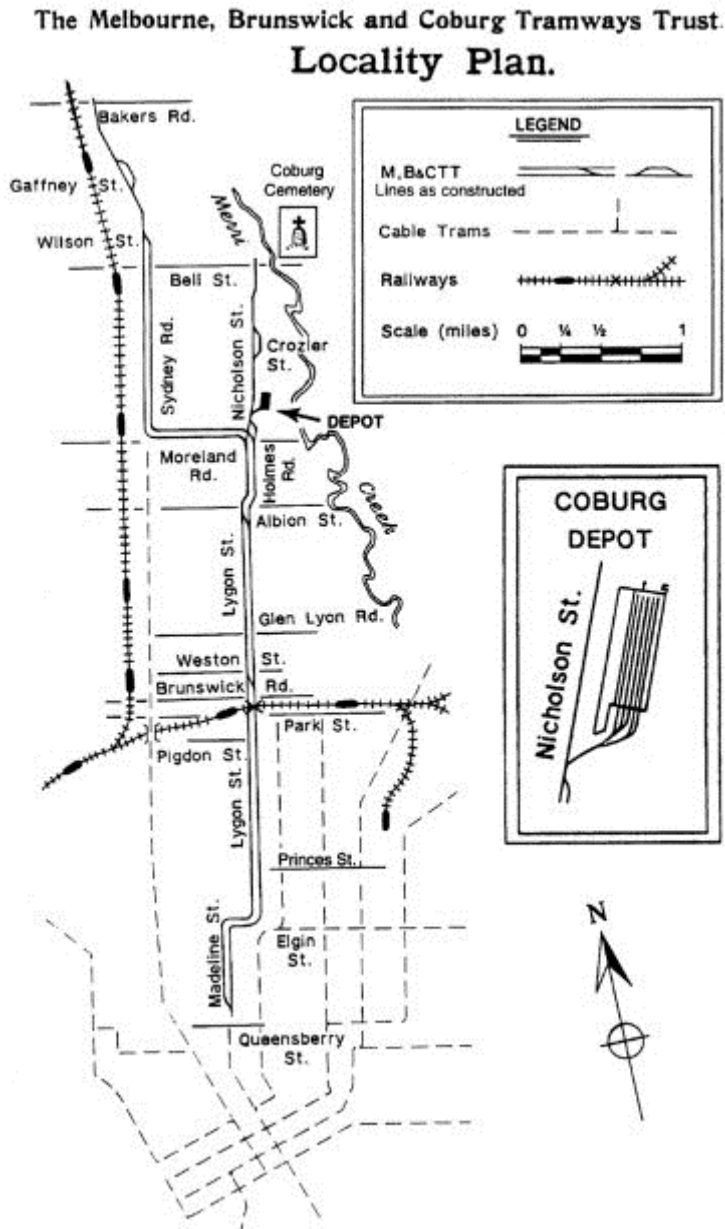


Figure 38: MBCTT map of routes. (Source: after Prentice)

Some extensions of the system were considered including at least two in West Brunswick, on to Pascoe Vale, and one to Fawner Cemetery, although the most pressing concern was the convert the cable tram line along Sydney Road to electric traction which was considered to have significant financial benefits. In an interesting case of concern for streetscape values (and perhaps an early recognition of the importance of Royal Parade as an iconic Boulevard in Melbourne, this was strongly resisted by Melbourne interests citing that overhead wires would disfigure the city.

The MB&C Tramways Club was formed during this period, leading on to the Tramways Benevolent Fund and other social activities. Established in February 1917 to promote the “sociability and good fellowship in the service...” and maintain a ‘... sick, accident and funeral fund, benevolent fund [and] various sporting clubs, literary club...’ it became the precursor of the Tramways Friendly Society.

The MBCTT was dissolved along with the other Municipal tramways in 1920, when the M&MBT was formed.¹¹⁶

The Coburg Depot was erected on the east side of Nicholson Street about central to the tramway, and was later extended by the MMTB. It was later used for surplus tramcar storage, then the overhead maintenance workshop, having been closed as a running depot in 1952 and was sold and demolished in 2007.

One small reminder of the tramways is the Charles Bowden Reserve on the eastern side of Nicholson Street at Bell Street created from the compulsory acquisition from Elizabeth Bowden to widen the roadway to allow traffic to get past the trams waiting at the terminus.

3.4.6 Fitzroy, Northcote & Preston Tramways Trust

The outer northern suburbs had been poorly served by public transport until the construction of railways to Coburg and Preston and the Clifton Hill to Preston cable tramway in the 1880s. Probably envious of the success of the eastern suburbs tramways, the municipalities of Fitzroy, Northcote and Preston proposed several tram routes. One would run on St George's Road from near the North Fitzroy cable tram terminus to Miller Street, Preston. Then it would separate into two branches – one along Miller Street and Gilbert Road to terminate at Regent Street, and the other turning east across the railway to Plenty Road to connect with the High Street cable tram terminus. The Fitzroy, Northcote and Preston Tramways Trust (FNPTT) consisting of ten members (three elected by each council) was duly constituted and incorporated. Alderman C. Ottery of Fitzroy was appointed Chairman as the tenth member, on 2 October 1915.¹¹⁷

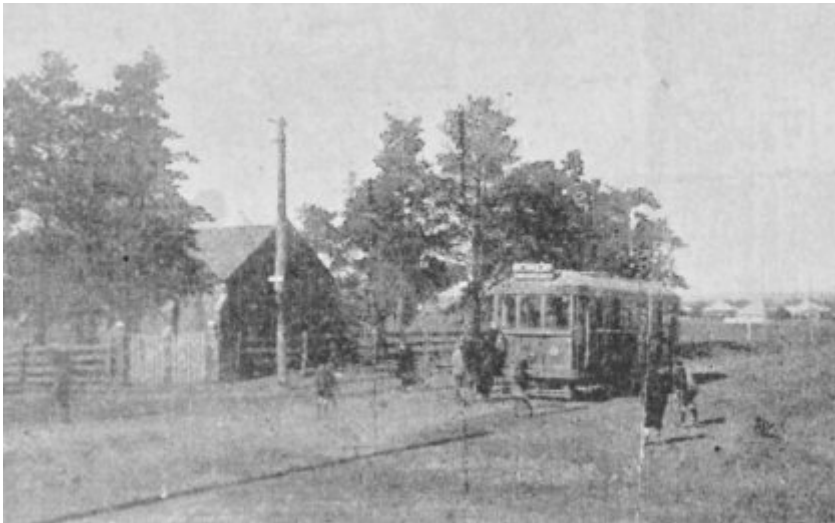


Figure 39: FNPTT No 8 East Preston, terminus, 1920. (*Darebin Historical Encyclopedia*)

Difficulties in raising finance saw the FNPTT approached the Melbourne, Brunswick & Coburg Tramways Trust with the offer of an amalgamation of the two municipal tramways trusts. The

¹¹⁶ Melbourne and Metropolitan Tramways Act 1918 (No.2995), Public Records Office Victoria, Agency VA 2971, Melbourne, Brunswick and Coburg Tramways Trust

¹¹⁷ Fitzroy, Northcote and Preston Tramways Act 1915 (No.2592) 3 August 1915; Public Records Office Victoria, Agency VA 2977 Prahran and Malvern Tramways Trust. Russell Jones "Never a paying passenger: the Fitzroy, Northcote & Preston Tramways Trust", Friends of Hawthorn Tram Depot, <http://www.hawthorntramdepot.org.au/papers/fnptt.htm>, 2009.

Trust borrowed an initial £35,000 from the Gillott Estate in February 1916, and a further £50,000 for construction in June 1917 from the State Savings Bank.

Construction commenced with a new bridge to take the tramway over Merri Creek, with the contract awarded to W.T. Grant for £8,359. McCarty and Underwood, were consulting engineers for tramway (having also engineered the Hawthorn Tramways Trust system). The bridge foundation stone was laid by local MLA J.G. Membrey on Saturday 18 August 1917.

On 27 Aug 1918 Edward Carroll of Malvern won the contract to construct the double track from the southern terminus to Miller and single track branches for £26,460 and the overhead & track lighting contract was awarded on 30 August 1919.

St Georges Road also carried the main Yan Yean water supply pipes in a wide reservation, unusually for a Melbourne boulevard, both tram tracks ran most of the way along the same side, with the unusual effect of the north bound cars facing oncoming trams if they veered too far to the right. A bridge was also required to take the east Preston branch over the railway at Miller Street due to Victorian Railways steadfast opposition to tramway level crossings. This became one of the few dedicated tram-only bridges in Melbourne (the former Maribyrnong river tram bridge was demolished in the 1970s).¹¹⁸

A trial run was staged on 27 January 1920 with various dignitaries, but with the amalgamations of the various municipal tramways, the tramway was not opened until it came under the ownership of the Melbourne & Metropolitan Tramways Board on 2 February 1920. Services commenced on 1 April 1920 with various ribbon cutting ceremonies, banquet and speeches among them Alex Cameron, the newly appointed Chairman of the MMTB.



Figure 40: Tyler Street, East Preston, terminus, circa 1920. (R 176 tramcar) (Darebin Historical Encyclopedia)

A tram depot was built on Miller Street at the corner of St George's, later enlarged by the MMTB. This closed as an operational depot in 1955 when a new and much larger depot was

¹¹⁸ This was colloquially known by tramway staff as 'Mount Buggery', partly due to the steep gradients required to clear the railway line.

built by the MMTB on Plenty Road. Thornbury Depot, as it became known, was then used for storage, and was demolished in 2006.¹¹⁹



Figure 41: Old Preston depot, 9 September 2002. W class sliding door cars in store. (David Langley)

3.4.7 Footscray Tramways Trust

The Footscray Tramways Trust was the last of the municipal tramways to be formed, but the Trust did not even get to see its trams run before the system was amalgamated in the MMTB. Charles Lovett, a noted local artist, was one of the first to suggest a tram for Footscray during the cable era of the 1880s.¹²⁰ Footscray's isolation from the city by the West Melbourne swamps and docks meant that much of the running would be through an industrial wilderness with little chance of raising revenue. Instead, the system that was ultimately instigated was a satellite, focussed on feeder lines to Footscray Station.

In 1914, tramway leagues in the western suburbs were lobbying for a variety of schemes, again probably spurned on by the success of their Eastern and Northern Suburban counterparts. The existing Essendon tramway seemed a suitable point of departure for some, although the traffic was more likely to be generated locally. Footscray council was more reluctant due to doubts as to the financial viability of a tramway. A more unified approach was made by the Footscray & District Tramways League, leading to some formal investigation in 1915.

¹¹⁹ The depot foundation stone is now in the collection of the Melbourne Tram Museum @ Hawthorn Depot. Russell Jones "Never a paying passenger: the Fitzroy, Northcote & Preston Tramways Trust", Friends of Hawthorn Tram Depot, <http://www.hawthorntramdepot.org.au/papers/fnptt.htm>, 2009.

¹²⁰ John F Lack (ed) *Charlie Lovett's Footscray: being the reminiscences of Charles Eldred Lovett first published in the Footscray Mail 1935-36*, Charles Eldred Lovett, 1993



Figure 42: Opening of the three Footscray tramlines. (Footscray Historical Society)

The Footscray council engineer assessed whether the Maribyrnong River bridge would be capable of supporting a tramway, evidently demonstrating some positive interest, although this option was not pursued as it was thought a link to the Essendon Tramway Company would be of more advantage to that company rather than assist Footscray. The State Government clearly responding to the municipalities desires, passed a bill authorising the establishment of the Footscray Tramways Trust in December 1915. The following year the Trust signalled its intention to borrow £100,000 to construct the tramways.¹²¹

Difficulties in obtaining material due to the War shortages, and continuing dispute in council delayed the construction. However, contracts were let to Messrs Lock & Raynor, Fisher & Moran and the Albion Contracting Company for construction of the lines, and rails and rolling stock ordered from BHP, Thompsons of Castlemaine and Brill in the US as well as other suppliers. The first tenders were advertised in 1917.¹²² In 1918 the Footscray Tramway Trust sought approval of five lines, three from Footscray railway station to Ashley Street Tottenham, Rosamond Road Braybrook, Williamstown Road Kingsville, Fisher Parade and Langs Road to link with the NMETL at Epsom Road, and Francis Street Yarraville.¹²³

The last two, however, were never commenced, and the Tottenham line was only built as far as Russell Street, due to financial pressures.

In the end, the Footscray Tramways Trust was dissolved on 2 February 1920 before the lines were completed and the MMTB took over the job of finishing the work and getting the trams running. The opening was finally held on 6 September 1921, and commenced operation with ex-P&MTT tramcars.

¹²¹ *The Argus* Thursday 5 October 1916 p.1

¹²² *The Argus* Monday 25 June 1917, Page 4

¹²³ Russell Jones 2001-3. "Footscray: genesis of a local tramway" Friends of Hawthorn Tram Depot, Friends of Hawthorn Tram Depot

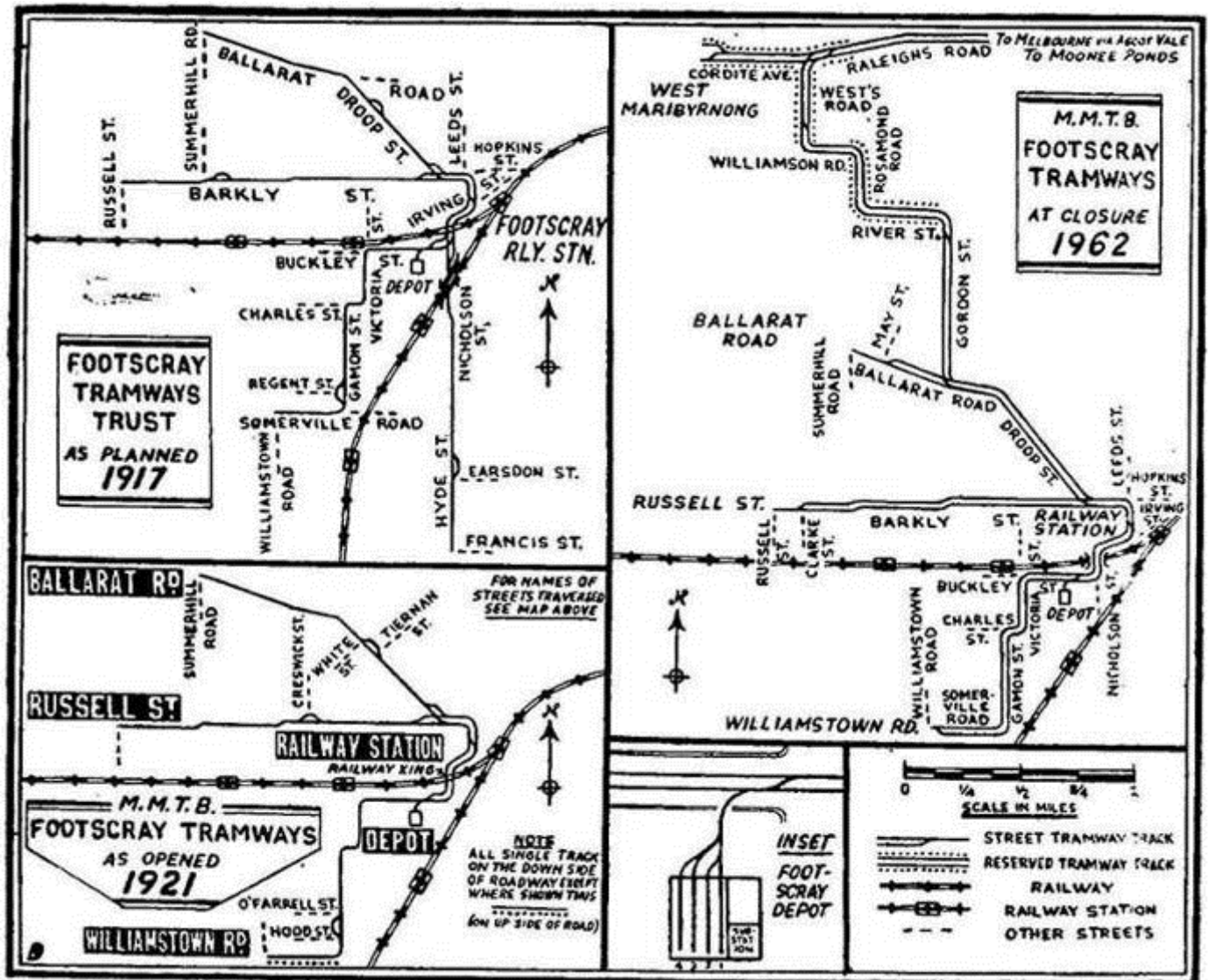


Figure 43: Plans of Footscray Tram System (State Library Victoria)

The Footscray system continued in isolation and relative neglect, lacking the connections with the rest of the network until an extension during World War II to the Explosives Factory allowed interchange with the Essendon line, although this required a change of trams and was an inconvenient and time consuming route.

The Footscray tramways were relatively well patronised by workers during good times, and like other tramways were at capacity during Wartime petrol rationing. In 1962 the branch lines were closed, with the exception of what has become Route 82 from Footscray Station to Ascot Vale. The Tram Depot was taken over for busses and retained part of the car shed up to the late 1980s.¹²⁴

¹²⁴ John Lack, *History of Footscray*,



Figure 44: Footscray Depot in the 1970s.(Plateshed.com)

3.5 Victorian Railways Tram Lines

There was one electric tramway operator in Melbourne during the twentieth century that was not taken over by the MMTB – Victorian Railways – giving Melbourne the unusual situation of having two different state government owned tramway operators.

VR operated two isolated tramways, one broad gauge (5'3") line from St Kilda railway station to Brighton Beach railway station, and one standard gauge line from Sandringham to Black Rock and Beaumaris.

3.5.1 St Kilda to Brighton Beach 'Electric Street Railway'

Sir Thomas Bent when Victorian Premier and Treasurer, was influential in establishing Melbourne's third electric tramway when the St Kilda to Brighton line was pushed through his electorate in 1906. Bent had been previously the Minister of Railways and was accused of using his position to enhance the value of his property interests in Brighton by influencing the Victorian Railways to build and operate a tram service.¹²⁵

The line was opened on 5 May 1906, with nine single truck motored tramcars and eight single truck trailers.¹²⁶ However, a fire on 7 March 1907 at the Elwood Depot destroyed the entire tram fleet, car barn and offices. The Railways hurriedly leased alternative second hand trams, and commissioned replacements, but the line was thereafter destined to be substandard and neglected.¹²⁷

The line ran from St. Kilda Station, (having initially but unsuccessfully been proposed as a railway extension), on the bay side of the Brighton Railway Line. The fact that it duplicated a nearby public transport route may also have diminished its potential.

¹²⁵ Margaret Glass, *Tommy Bent: bent by name, bent by nature*, Melbourne University Press, Carlton, 1993.

¹²⁶ Russell Jones, "VR electric street railways", Friends of Hawthorn Tram Depot. 2001-3.
<http://www.hawthorntramdepot.org.au/papers/vrtram.htm>

¹²⁷ L. Marshall-Wood, *The Brighton Electric Line*, Traction Publications 1966.

The line was not a productive revenue earner for the railways (possibly reflecting the preference of residents of the area for private transport, for which many of them had the means). Lack of commitment by the reluctant railway managers to the system and shortages of material and finances, especially during the Second World War, saw the system deteriorate substantially. The Railway Trams became known locally as 'Ricketty Kates'.



Figure 45: Terminus of VR Brighton Beach line at St Kilda station Public Record Office Victoria.

Victorian Railways decided in 1953 to close the Brighton line but following a strong public opposition campaign this was changed, in 1956 to only close the line beyond Elwood Depot. This was a brief respite as in 1958 it was decided to totally close the line and the final day of operations was the 28th of February 1959.

Land for the Elwood Depot at the corner of St Kilda Street and Head St was excised from Elsternwick Park, and a power house constructed on part. This was leased after closure to the Brighton-St Kilda Bus Lines as their depot but in the 1990s the site was cleared and redeveloped for housing. Tram shelters on Beach Road and Green Point Reserve, the 'H crossing' with the MMTB Point Ormond line is rumoured to survive under a roundabout at Glenhuntly Road. The Park St terminus had a substantial waiting shelter built by the Railway construction Branch of the Board of Land & works in October 1906, but this was sold to the Brighton council for £20 and moved to the Brighton Gardens in 1909.¹²⁸ This is probably the oldest tram shelter remaining in the state.

¹²⁸ *Brighton Southern Cross*, 5 May, 8 Oct, 20 Oct and 3 Nov 1906, 21 April & 19 June 1909, notes compiled by L.M. Rogers, copy provided by Robert Green

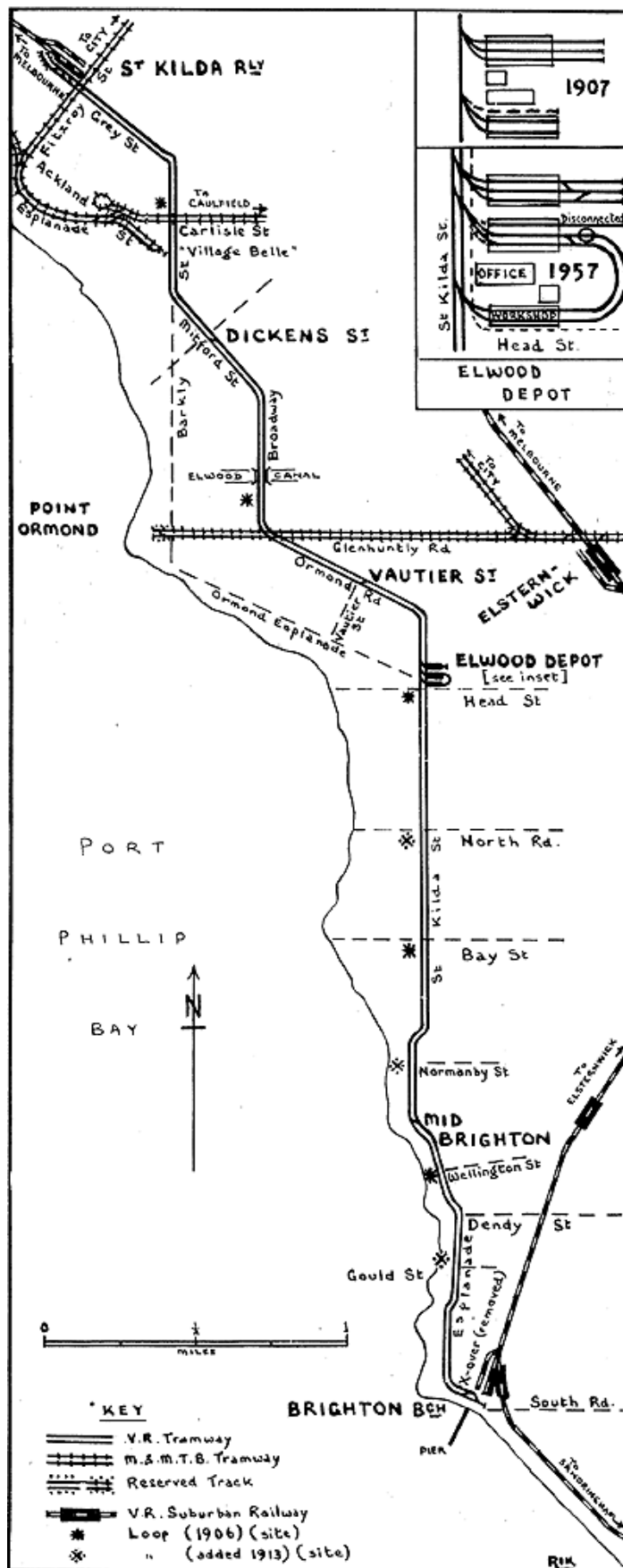


Figure 46: St. Kilda Brighton Tramway Map from: *The Brighton Electric Line*
<http://www.vicsig.net/index.php?page=trams§ion=vr>



Figure 47: VR tram shelter opposite Kinane St Brighton.

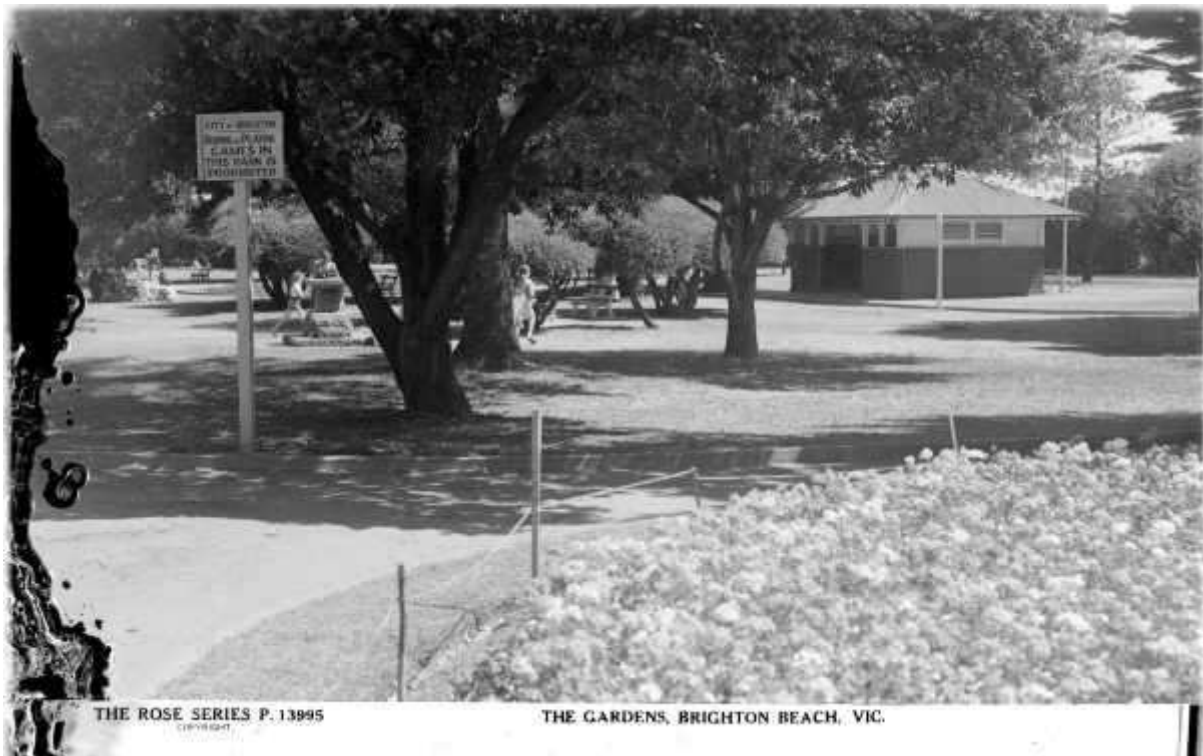


Figure 48: Former Park Street terminus shelter in Brighton Gardens (State Library Victoria H32492/8796)

3.5.2 Sandringham to Black Rock and Beaumaris

As with the push to extend the St Kilda railway line, the completion of the railway to Sandringham in 1887 spurred local agitation for further extension, partly with the promise of attracting further land boom property speculation. While there were a number of tramway leagues formed around Cheltenham and Beaumaris, it was Moorabbin Shire Council, which ultimately constructed a horse tramway in 1888 to service the areas south of the station to Cheltenham and Mordialloc. However, the onset of the Depression in 1891, saw the tram falter, eventually closing in 1914.¹²⁹

New schemes for rail and tramway construction were also put forward at this time, and the Railway Department acceded in November 1914 to build an electric tramway from Sandringham

¹²⁹ Graham J Whitehead, 'Did You Know? Trams' Kingston Historical Website, <http://localhistory.kingston.vic.gov.au/htm/article/237.htm>

to Black Rock using an inland route. Unlike the Brighton Tramway, this line was to be at the standard gauge, possibly in recognition of the efficiencies from use of existing rolling stock from the Municipal trams, and possible future integration, in contrast to the isolated broad gauge Brighton tram. Difficulties in obtaining rails and electrical equipment meant the line was not ready for opening until 10 March 1919. The depot was built in Sandringham railway station yard off Bay Street, and a spur track ran to a terminus in Station St. allowing for direct interconnecting with the trains.

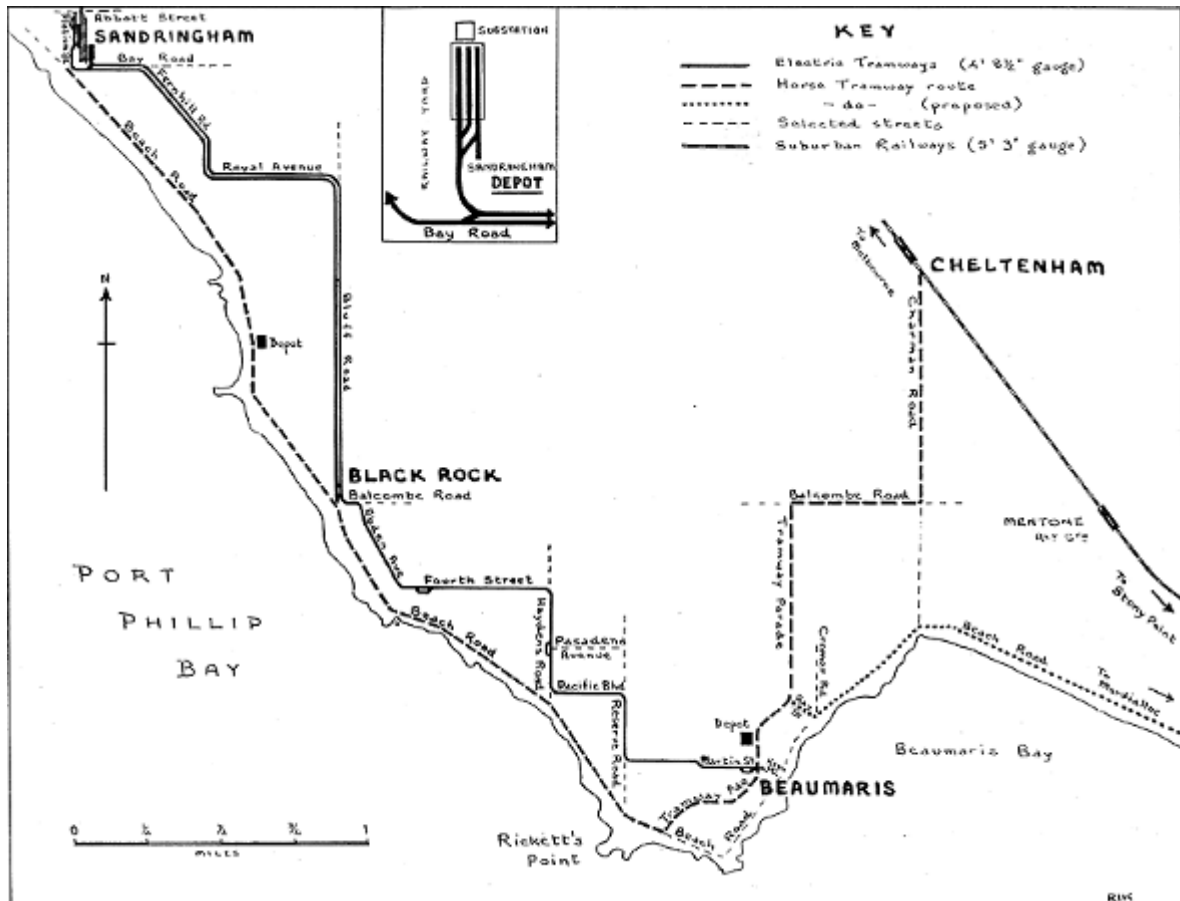


Figure 49: Route of Beaumaris Tramway, (<http://www.vicsig.net/index.php?page=trams§ion=vr> Marshall-Wood)

Further lobbying from Beaumaris residents saw the Parliamentary Standing Committee consider an extension in 1916 and again in 1919, but not completing it until September 1926 in part thanks to a subsidy from Sandringham council. This area, at the extreme edge of Melbourne, did not see the development hoped for, and the extension operated for several years with very low patronage and heavy losses, to become known as the 'Bush Tramway') closing in August 1931 in another Depression.¹³⁰

Single man operation in modified tramcars and the increase in patronage during World War II as a result of petrol rationing, saw the Sandringham-Black Rock tramway operate profitably for a time. However, in June 1945 the Railways Department announced the closure of the line and replacement with an omnibus service. The ensuing public campaign to keep the line open dragged on, but ultimately was lost and on 5 November 1956 the tramway was replaced with railway operated buses.

¹³⁰ Arthur Stone 'The Sandringham Tramway' – *Running Journal*, Volume 6, Number 2, Oct-Nov 1969

The former car barn at the Sandringham railway station was converted to a bus depot and maintenance workshop with a row of shops built across the former entrance. A substation may also survive from the tramway. Tramway Parade, Beaumaris recalls the former horse tramway.¹³¹

3.6 Tramway Board

Because of the expiry of the original 25 year lease to the MT&OC, operational authority for the cable tram and the Royal Park horse tramway reverted to the Tramway Trust on 30 June 1916. The Tramway Board, a State government agency, was formed to take over. Under the provisions of the Tramway Board Act 1915, the employees of the MT&OC and the Trust were transferred to the Tramway Board together with all property.

At the time of the Tramway Board takeover there were eleven brick power houses equipped with mostly locally-made steam engines and boilers, 18 car sheds (all but two of timber and iron construction) repair shops on Nicholson Street, and head office in Bourke Street. Rolling stock comprised 490 dummies, 472 standard trailers, 56 bogie trailers and small numbers of other cars of different varieties.¹³²

As an interim measure, the Tramway Board still undertook some significant works, including commissioning the construction of new cable tram sets to alleviate congestion, upgrading some engine houses, and erecting other facilities, such as the shelter in McArthur St. and the depot office at Clifton hill, both of which feature the otherwise rare TB monogram.



Figure 50: Melbourne Tramway Board monogram on Clifton Hill Depot

3.7 Melbourne & Metropolitan Tramways Board (MMTB)

The Melbourne & Metropolitan Tramways Board (MMTB) was appointed (following legislation in 1918), as an independent statutory body which reported to the Minister of Public Works,¹³³ responsible for all tramways within a ten mile (16km) radius of the Melbourne GPO, with the exception of the Victorian Railways 'Street Railway' lines.¹³⁴ It took over the cable tram

¹³¹ Marshall-Wood, L. 1966 *The Brighton Electric Line*, Traction Publications

¹³² Tramways Board, Report and Statement of Accounts for the period 28/1/1916-31/6/1917. Appendix 2

¹³³ Melbourne and Metropolitan Tramways Act 1918 (No.2995)

¹³⁴ Public Record Office Victoria Agency VA 2694- Melbourne and Metropolitan Tramways Board

network and Royal Park Horse tramway, and the Municipal tramway trusts within 12 months, but delays were experienced because the MMTB was not empowered to construct electricity generators, so there was a wait for the SEC to be formed while negotiations over the purchase of the Essendon Lines in which Cr Showers represented the Essendon City Council resulted in the NMETL tramways becoming part of the MMTB System on 1 August 1922.¹³⁵ A seven member Board, Chairman and Deputy Chairman were appointed. The MMTB inherited 216 electric trams of twenty-one different types from its predecessors, which it reclassified under classes A-H or J-V.¹³⁶

The majority of the suburban electric tramway trusts were transferred to the Board on 2 February 1920:

- Prahran and Malvern Tramways Trust
- Hawthorn Tramways Trust
- Melbourne, Brunswick and Coburg Tramways Trust
- Fitzroy, Northcote and Preston Tramways Trust
- Footscray Tramway Trust
- Northcote Municipality Cable Tramways

The North Melbourne Electric Tramway and Lighting Company system was not included until 21 December 1922, due to the need for the State Government to make separate arrangements for absorbing the Company's electric lighting supply infrastructure.

The composition of the Board was initially based on transferring expertise from the various Trusts. Alex Cameron was appointed the Melbourne & Metropolitan Tramways Board (resigning his role with the Prahran & Malvern Tramways Trust on 31 October 1919) and several other P&MTT officers also took up senior positions with the MMTB, which led to many of its engineering and management practices being continued in the larger organisation.

3.7.1 Rationalisation and the General Scheme

With such a diversity of rolling stock, different traction systems and unco-ordinated system of depots, maintenance facilities, offices and other infrastructure, the Melbourne Tramways clearly required rationalisation once they had come under a single administration. To this end, the MMTB undertook studies of the existing tramways and Melbourne's transport needs¹³⁷ and prepared a "General Scheme for the future Development of Tramways" in the metropolitan area. This was specifically required in an amendment to the Tramways Act¹³⁸ to provide a plan or framework upon which a systematic extension could be carried out, and to provide a basis for the future development of the tramways of the Metropolis. The proposal envisaged a vast expansion of the tramway system with several new lines. The main issue was what to do about the aging cable system, and the inability to increase its capacity. For example the cables and engines had a limit to how many or how heavy the trams on the line could be.¹³⁹

¹³⁵ Richardson, J. 1963, *The Essendon Tramways*, pp.13

¹³⁶ Russell Jones

¹³⁷ MMTB, Some facts concerning the Melbourne Tramways, Sands & McDougall 1924.

¹³⁸ No. 3074. In Act to amend the *Melbourne and Metropolitan Tramways Act* 1918. [28th September, 1920.]

¹³⁹ Some facts connected with Melbourne Tramways October 1924, Sands & McDougall, (copy provided by Robert Green)

The report considered options for various forms of public transport including total or section replacement of the cable system with trolley, conduit or surface contact electric tramways, battery, petrol or petrol electric trams and motor busses of (trolley) trams.¹⁴⁰

There was some opposition to the modernisation of transport in Melbourne. Councillor and a member of one of the earlier trusts, David Hennessey had concern for "City Disfigurement" caused by the proposed overhead wires for the trams. He was interested in the conduit system of current collection in operation in London and Paris. The Melbourne City Council also initially opposed to the trolley wires and the noise of electric trams in comparison with the cable cars. The efficiency, cost and safety of the overhead system won the day, in large part to the defence by Board Chairman Alex Cameron.¹⁴¹

The board undertook various studies of the existing tramways and Melbourne's future transport needs in order to prepare a plan of development this resulted in the "General Scheme", which was something of a wish list, indicating future tram lines forming a web across the city and suburbs.¹⁴² The intention was to develop new routes as potential traffic and revenue warranted, with a combination of serving existing needs and facilitating future suburban development. Indeed it was a stated aim of the general scheme that it "... precede the population, rather than follow the population [so that] ...the city, under such a principle of transit development, is enabled to grow and expand in an orderly predetermined manner."¹⁴³ In this sense the tramways General Scheme pre-empted the role of the Metropolitan Town Planning Commission, and their report of 1929.¹⁴⁴

By 1929, the MMTB was able to point to its successes in constructing 55 miles of new double electric track, converting 15 miles of cable track and carrying over 2 billion passenger trips.¹⁴⁵ The role of the tramways in promoting further suburban development can be seen in the dramatic increases in patronage. Between 1918, when electrification began, and 1924, the number of passengers on the metropolitan rail system grew from 97 million to 159 million.¹⁴⁶

The Scheme proposed new lines along major connecting roads, linking the isolated Footscray lines via Ascot Vale and Maribyrnong, new lines in Williamstown, Ivanhoe, Brighton, and extensions to nearly all the existing lines. A couple of sections of track such as Rathdowne Street cable tram, and Victoria St Ascot Vale.¹⁴⁷

¹⁴⁰ K.S. Kings, "50 years of the MMTB", *Running Journal* Vol 6. No 3 Dec 1969pp.5-6.

¹⁴¹ D. Menzies "The 1922 Plan - *Running Journal* Volume 10, Number 1 February 1973

¹⁴² Some facts connected with Melbourne Tramways October 1924, Sands & McDougall, (copy provided by Robert Green)

¹⁴³ MMTB, *Melbourne Tramways, The Development of a Great System MMTB c 1927*. (copy provided by Robert Green)

¹⁴⁴ Metropolitan Town Planning Commission, 1929, Plan of general development, Melbourne: report of the Metropolitan Town Planning Commission, Melbourne : H.J. Green, Govt. Printer, 1929.

¹⁴⁵ Melbourne and Metropolitan Tramways Board, *Melbourne and Metropolitan Tramways Board Its Progress and Development 1919-1929*, MMTB, 1929,

¹⁴⁶ Encyclopaedia of Melbourne, Suburbs and Suburbanisation <http://www.emelbourne.net.au/biogs/EM01440b.htm>

¹⁴⁷ "MMBT Plan for General Scheme" (in *Running Journal* Volume 10, Number 1 February 1973)



Figure 51: General Scheme for Tramways MMTB 1922, (Running Journal Volume 10, Number 1 February 1973)

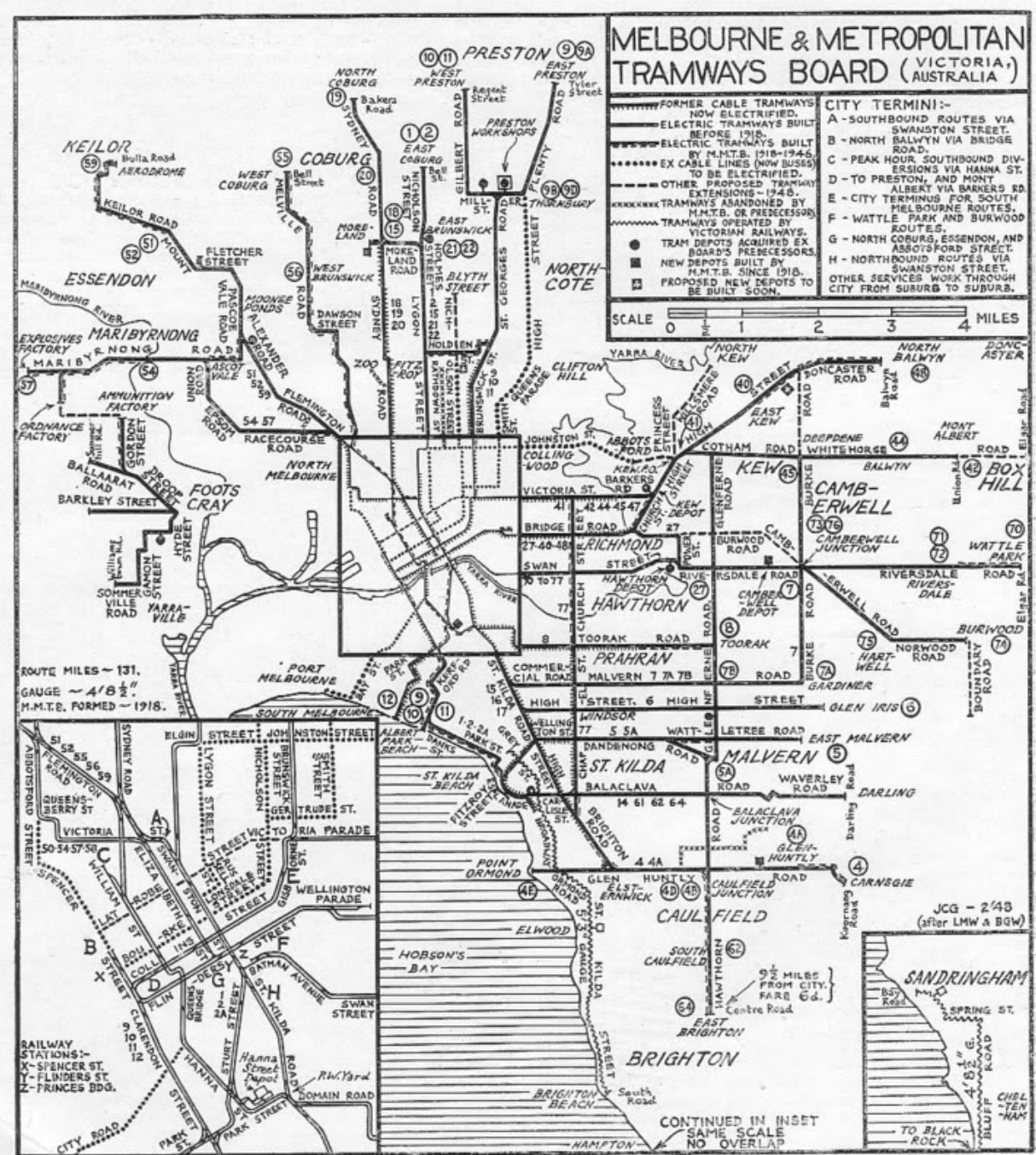


Figure 52: Melbourne's Tramways c1938 showing conversions of cable trams to electric.

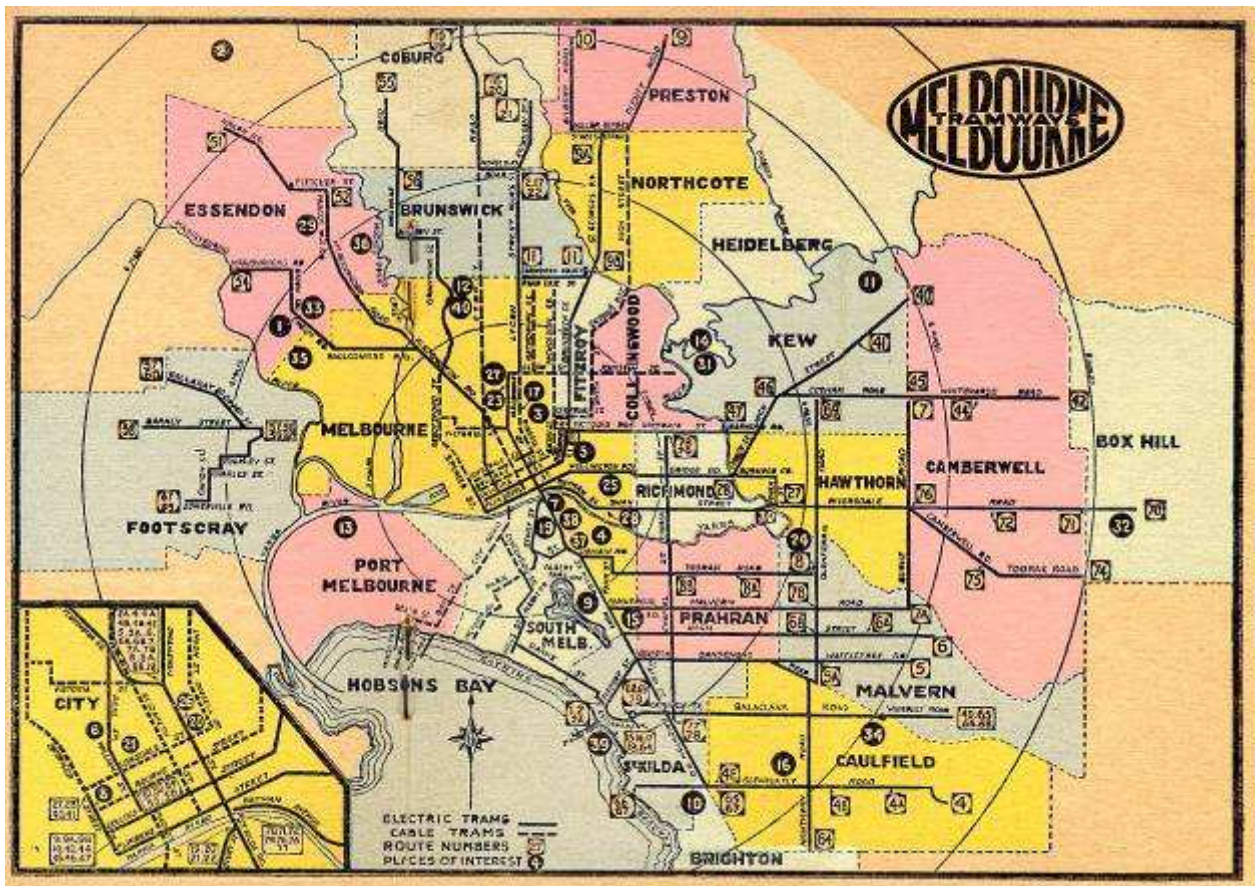


Figure 53: Plan of Melbourne Tramways c1940.



Figure 54: Trams on Swanston Street 1947. Public Record Office Victoria.

The tram network was gradually rationalised, route numbering introduced, and various services extended. The cable trams were progressively converted to electric traction, commencing with the St. Kilda line in 1925 and finally the conversion of the Northcote line in 1940 initially to bus operation, but then electric tram in the 1950s.

3.7.2 New Tramcar designs

Part of the MMTB plans included developing a new tramcar design to cope with much higher passenger loads, enable faster ingress and egress, and overall running efficiency.

However, the first new trams to be built by the Board were additional cable trams to meet the immediate demand for increasing capacity on these lines. A group of 24 single truck cars were built to an existing design, pending finalisation of the design of a large bogie car. The Prahran and Malvern Trust had recently ordered several trams of the Q, R and S type, with a saloon at either end and a semi open compartment between on a dropped frame.



Figure 55 P&MTT No 44 showing drop-centre three entrance configuration which influenced the original W Class.



Figure 56 "L" class tram 101, (in later MMTB livery) one of six built for the P&MTT and the predecessor to the W. W1 and W2 <http://www.myweb.net.au/mottram/trams/nonstd/NONSTD.HTM>

This was the progenitor of the large bogie tram to be called the W class tram. It was designed and manufactured in the MMTB Holden Street Workshops in North Fitzroy from 1923 and

continued to be the mainstay of the Melbourne Tramways for the next 50 years or more with twelve different major variations and over 750 examples.

The first W class were highly successful on the suburban routes, but the narrow entrances and aisles slowed loading when they ran in Swanston Street after the cable conversion. The problem was overcome by altering the design of the drop centres to make an open section with two longitudinal seats near the edges of the car. A complex series of changes ensued with various seat layouts from W to W1 and then to W2 type.¹⁴⁸

Subsequent versions of the W saw the open sides or three entrances replaced with two larger openings. The W5 and W6 variants (which included many earlier trams converted to this configuration) featured smoother suspension. These became the backbone of the Melbourne tram fleet for 30 years until the introduction of the Z class. The SW5 introduced automatic sliding doors and padded seats, making travel in the centre section more comfortable.¹⁴⁹



Figure 57 W1 No 4231, with open sides in original brown and cream MMTB colours. (<http://www.myweb.net.au/mottram/trams/moomba2000/moomba2000.htm>).

Originally painted in the former P&MTT's chocolate and cream paint-scheme, the green and cream colours which came to typify W-class trams were introduced in 1925 to complement Melbourne's tree-lined boulevards and remained standard until after the formation of the Metropolitan Transit Authority (the MET) in 1983. The colour scheme was first used on buses in 1924, (having been chosen ahead of an alternative of black with red wheels),¹⁵⁰ and one man trams. It was introduced in 1927 on bogie trams initially as an experiment with "one of the large bogie electric trams running on the Toorak route...painted green instead of the usual brown colour." While the view that the colour was chosen because it complemented or blended with the deciduous trees along Melbourne's Boulevards, one other reason cited was that the use of green

¹⁴⁸ This is best shown in seating diagrams in Norman Cross, Dale Budd (ed), Randall Wilson (ed) 2001 *Destination City - Melbourne's Electric Trams*

¹⁴⁹ K.S. Kings, "50 years of the MMTB", *Running Journal* Vol 6. No 3 Dec 1969, pp.7-8

¹⁵⁰ MMTB letter book no 3 29/8/1924 (Memos signed by the secretary - (probably forwarded to the engineer), transcribed copy provided by Robert Green.

instead of brown as a colour for trams will make possibly a slight saving in the cost of painting” presumably due to the lesser price and quantity of pigment used.¹⁵¹

Advertising on tramcars also came in during this period initially with an “experiment with a small and neat form of advertising board placed on the outside of tramcars, just under the cornice of the roof, directing attention to some form of event of the day, such as a sale, carnival, sports meeting, or other public attraction.” The advertising was seen as a means to increase revenue, both directly from the advertisers, but also by increased patronage of the tramways.¹⁵² This can be seen as the forerunners of the more substantial advertising from the discrete panels on the ends and sides, to all-over, plastic wrap-arounds, covering windows and doors with perforated layers.



Figure 58W 2s and 5s in 1970s showing advertising panels
<http://www.stampboards.com/viewtopic.php?f=10&t=10448>

One of the early decisions of the MMTB was to undertake its own manufacture of rolling stock, rather than tender for small numbers of different vehicle types according to need and demand. To do this it established new workshops on vacant land opposite the Preston Depot on the corner of St George’s Road and Miller Street.

The Preston Tramway Workshops were constructed to integrate and centralise tram manufacture and maintenance, into the Tramways Board’s operations.

¹⁵¹ “New Colour for Trams. Green instead of Brown” *The Argus*, Friday June 3 1927 p.16.

¹⁵² *The Argus* 18 October 1929. p.8



Figure 59: Camberwell Tram Depot.1925 (Boroondara Library LHPH 551

The Melbourne tramways moved into a "golden era" in the 1920s and 1930s, when patronage was consistently high and the Board was provided with the resources necessary to convert the cable tram system and maintain and expand the electric system to meet growing demand and suburban expansion. Construction of connecting tramways such as Brighton Road between Chapel Street and Elsternwick East was given priority.

In 1925 a new tramway from the city, through Royal Park to West Coburg was opened. The city terminus in William Street was designed to avoid the cable tram routes the Essendon Lines were extended south along Flemington Road to join the new electric tram route at Abbotsford Street, with the cable being cut back to that point. Maribyrnong River trams used a new line along Racecourse road direct to Flemington road, so that after nearly 20 years trams were able to run directly from Essendon to the city. The original Essendon Tramways cars were dispersed to less heavily trafficked routes and 33 W class trams were stationed at the Essendon Depot. This was happening when the many other cities were actually closing their tramways or starting to run them down.

Several new depots were constructed, including that on Sydney Road Brunswick, South Melbourne, Glenhuntly and Preston. A number of electricity substations were built to systematise the distribution of power from the SEC Latrobe Valley generation and both extensions to the existing lines, and entirely new routes were constructed. Central control of the substations was also implemented, operated from the central control room in Faraday Street Carlton, and a secondary control room established for use in the event of damage from enemy air attack during World War 2 between Queensbury and Bourverie Sts. In order to reduce supervisory manpower requirements, the MMTB constructed remote control gear of its own design for its electrical substations, and achieved a capability such that almost 100% of substation components could be built in-house.

After the Essendon tramway was taken over by the Melbourne & Metropolitan Tramways Board a saw tooth roof extension to the original car shed, constructed by Thompson & Chalmers Pty Ltd, was made in 1924, and an overhead tower wagon shed was erected by Massey & Sons. A further

extension to the car shed was built by McDougall & Ireland in 1941-42, and the two storey brick office building, erected by EA Watts, was added in 1944.¹⁵³

In 1937, a new headquarters building was erected in Little Collins Street to house the MMBT centralising management, administrative and design functions.

3.7.3 Wartime and Post War survival

During World War 2 patronage of the tram system was greatly increased, and new line extensions constructed to serve the munitions factories in Footscray and Maribyrnong.

Various attempts were made to reduce costs or expand services including trials of one-man operation and all night operations. Twenty-four single truck Q and R class trams were modified for one-man operation on selected routes where light loadings made them viable, such as some all-night services and daytime routes with small passenger loadings, such as the Point Ormond and Holden Street shuttle services.¹⁵⁴

After World War II other Australian cities began to replace their trams with buses. Melbourne however resisted, much of the credit going to the then Chairman of the MMTB Robert Risson who was able to argue in economic terms for the retention of tramways, both because of their efficiency in moving large numbers of commuters in contrast to private cars and buses, and the prohibitive cost of ripping up the concrete-embedded tram tracks.

The Melbourne Metropolitan tramway system had a peak in usage in 1949 when there were 260 million trips, but with the increase in incomes in the post war boom, and consequent increase in private motor car ownership, patronage dropped for most of the second half of the century.

Some tramlines were closed, notably the Footscray Branches (and the VR Brighton and Sandringham lines) but some new lines were opened in the 1950s, such as the West Brunswick and Essendon Aerodrome lines. The Point Ormond also closed, while connection of the Footscray system to the main system finally occurred in 1954.

One of the major post war developments, was the construction of new depots at East Preston and Nicholson Street, North Fitzroy in 1955 following the re-introduction of trams in Bourke St after conversion of these routes from cable. The East Preston depot was opened by the minister for Transport A. G. Marner on 24 June 1955,¹⁵⁵ and it initially serviced route 96, and later became an adjunct to the St Kilda and Port Melbourne light rail routes. The depot jointly operated these routes with South Melbourne. On December 19th, It ceased operating as a tram depot in 1993 but houses City Circle W-Class fleet, and some other trams.¹⁵⁶ North Fitzroy re-opened as a "running depot" 2009 or 2010. It was still connected to the system, but not used, other than for the storage of privately owned trams.

¹⁵³ Victorian Heritage Register, Essendon Tram Depot.

¹⁵⁴ All night long: Melbourne's recycled one-man cars

¹⁵⁵ Plaque on front of building.

¹⁵⁶ VicSig, <http://www.vicsig.net/index.php?page=trams§ion=heritage&museum=north%20fitzroy>)

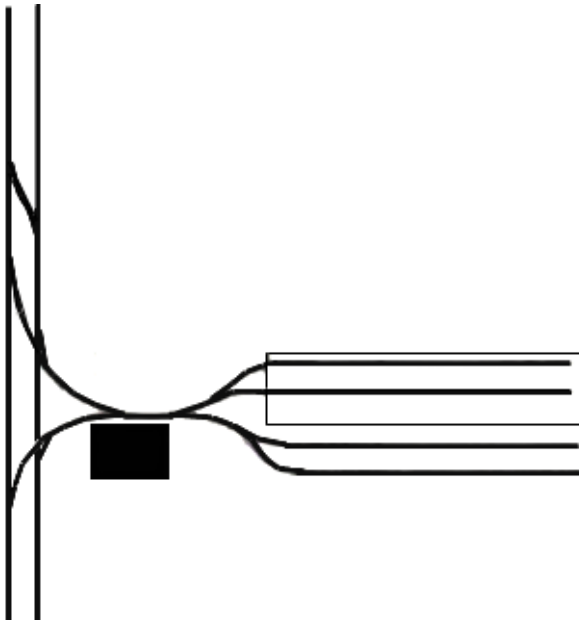


Figure 60: Track layout at North Fitzroy Depot (VicSig)



Figure 61: Tram side of North Fitzroy Depot

An example of the arguments occurring in transport planning is illustrated by the initial plans for the St Kilda Junction Project and associated road improvements, which included the retention of the East Brighton and Malvern Burke Rd trams in narrow Wellington Street. The MMTB sought successfully for trams to utilise the centre median strip in the divided roadway and so when opened in late 1968 it proved to be more than a symbolic relocation. The development was similar to what was by then common practice in Europe. In an unusual form of planning, underground of Swanston St and other CBD lines was briefly considered in 1962.



Figure 62: Model for proposed underground tram route beneath Swanston and Bourke Streets (*Destination City* 4th ed.)



Figure 63: St Kilda Junction, 30 August 1969. Photograph courtesy Mal Rowe.

In 1969 the Metropolitan Transport Committee released the 1985 Transport Plan for Melbourne. The report recommended the continued operation of trams and that further studies be undertaken into proposed tram or bus extensions.¹⁵⁷

By the 1970s Melbourne had the only major tram network in Australia, with only single or tourist lines operating elsewhere such as Adelaide's Glenelg Tram and the Bendigo and Ballarat historic tourist trams.

Various reasons have been put forward for the resistance to closure in Melbourne including the wide streets and geometric street pattern making trams more practicable than in many other cities, the power of the unions in protecting their jobs and public amenity, the important role of partly MMTB, Chairman Sir Robert Risson, and the relative modernity of the rolling stock, since with the W class, and replacement of cable trams, much of it had been renewed from the 1940s. The relative modernity of the infrastructure also assisted this, as the conversion of the cable trams meant that much of the system was much newer than Sydney, Brisbane and Adelaide.

The system may have stagnated in the later twentieth century, but revitalising commenced in the 1970s with the first completely new trams, the z-class being designed and developed at Preston Workshops. This new, modern style of tram was modern in many senses and although now not as emotionally appreciated as the traditional W class, it set the scene for a new approach to tram design and operation. The main functional changes were in the pay as you enter facilities, with seated conductor, which might be seen as a compromise to one man operation.

An important project was the development of a new prototype tram, 1041 at the Preston Workshops, which although taking a long time to get it built and running, eventually convinced Government that modernisation of the rolling stock should happen. The tram in its unusual colour scheme, itself representing a break with the past, was known as the "Clockwork Orange" tram by many and was followed by the new Z's also in orange.

In the 1980s government policies shifted towards increased privatisation and reduction in public spending on tramways, with the major battle over single operator trams and the removal of tram conductors. This was seen not only as an industrial relations or public amenity issue, but also a cultural one, as conductors were considered "custodians of Melbourne's soul" as one contemporary website puts it.¹⁵⁸

The conductors strike saw 250 trams were parked and abandoned by their drivers and conductors in Melbourne's CBD streets for 33 days commencing 1 January 1990. The trams did not move because the government shut down the power grid. This event is still commemorated by past conductors and former and current tram workers.¹⁵⁹ However, one man tram operation finally eventuated as part of the settlement process.

The last decade has seen a revitalisation of the system, with new routes, rolling stock, greater priority given to trams in sharing the roads and upgraded passenger facilities.

3.7.4 Omnibuses

¹⁵⁷ "The Sir Robert Risson era: an enduring legacy", Friends of Hawthorn Tram Depot, <http://www.hawthorntramdepot.org.au/papers/risson.htm>

¹⁵⁸ 'I Prefer A Tram Conductor', organisation web site <http://www.kitezh.com/trams/>, viewed 12.11.2010.

¹⁵⁹ The Age, *January 16, 2010*

Horse Drawn busses (along with hansom cabs) provided the mainstay of public transport in Melbourne before the introduction of the Cable Trams. Under the MT&OC, omnibuses continued to provide an extensive service, but generally were routed to extend the cable lines into surrounding suburbs. This process continued with the development of electric trams, as bus services were progressively relocated to the outer areas.

In January 1925 the MMTB become a motor bus operator, and it has operated these vehicles continuously since then. The Board's early powers were limited by its Act of Parliament which permitted buses to be run for "stimulating of developing the traffic of any tramways". The Board's Chairman, Alex Cameron returned from an overseas study tour early in February, with a new enthusiasm for busses. With the upsurge in unrestricted running of privately owned motor buses along tram routes during 1927-24, and the pending cable tramway conversions, the Board ordered 45 motor bus chassis and bodies. The first service commenced from the City, at Latrobe Street, via St. Kilda Road, to Elsternwick station.¹⁶⁰

The Board also applied to operate buses on three other routes: Camberwell Junction to Hawthorn Bridge, Burke Road and Barkers Road to Victoria Bridge and (3) Essendon to Heidelberg, but the Minister felt that these routes should be operated by private buses and did not grant them to the Board. By the middle of 1926, there were 55 busses in the Board's fleet engaged on the Elsternwick route and on cable tramway conversions.¹⁶¹

The former Nicholson Street cable tram sheds and workshops were used converted to a central bus depot and workshop in 1929, and from 1935, this site became the MMTB's main bus depot and maintenance workshop. Facilities were included for servicing, refuelling (with 6 large above-ground diesel tanks which are still in place) and large traffic offices and amenities building in a modernist style.¹⁶²

Two new bus garages were constructed by the MMTB in Port Melbourne and Footscray in 1937 to house a growing fleet, the latter as an extension of the tram depot.¹⁶³ Port Melbourne depot was closed in 1966 and the Footscray bus fleet was transferred to the tram depot when that closed in 1962. there was considerable industrial action over the closure of the Footscray trams and their replacement of one man operation busses, which resulted in loss of conductors' positions.¹⁶⁴

¹⁶⁰ David Wilson & Keith Kings, Buses of the Melbourne and Metropolitan Tramways Board (MMTB) the Early Days 1925 to 1934, *Australian Bus and Commercial Vehicle Heritage*, July/August 2006, pp.8-13; K.S. Kings, Fifty years of Tramway Buses in Melbourne, *Bus and Coach News Sheet*, December 1974, p.3-5, February 1975 pp3-5

¹⁶¹ *Running Journal* vol 6 no 3 Dec 1969.

¹⁶² MMTB *Annual Report* 1939, 1940; Wilson & King 2006, p.13.

¹⁶³ MMTB *Annual Report* 1937.

¹⁶⁴ Keith Kings & David Wilson, "Buses of the Melbourne and Metropolitan Tramways Board (MMTB) Part 2 1935 to 1940. *Australian Bus and Commercial Vehicle Heritage*, January/February 2007, pp.10-17.



Figure 64: MMTB Bus and W Class tram 1974 – showing uniform green and cream livery¹⁶⁵



Figure 65: Port Melbourne Bus Depot. (MMTB Annual Report)

3.7.5 Motor traffic and conflicts

Conflict with road traffic has been regularly raised as an issue for Melbourne's tramways. The original complaint came from operators of other hire vehicles as the tramways almost immediately made other public transport redundant when a new route opened. However, from the late 1920s, the growing amount of motor cars and trucks led to congestion on a number of

¹⁶⁵ <http://www.busaustalia.com/gallery/displayimage.php?album=158&pos=0>

roads, and in particular the main entrances to the city. The tramways officials defended their role in this situation by arguing that trams moved people far more efficiently than omnibuses or private vehicles and pointed to the small increase in the number of the Board's vehicles over the period that congestion became a public concern (i.e. 805 trams in 1923 and 925 in 1929). The board also argued that the conversion of the cable system to electric traction proved to reduce congestion and accidents.¹⁶⁶

In some cases the replacement of trams with buses was considered as a means of alleviating congestion and conflict with cars. Board Chairman Hector Bell, was finding all over the world, that diesel buses were replacing trams and came to the conclusion that this was the way to go. However, he recommended in his report of 1939 that the Bourke Street tram should not be closed when it came up to converting the cable line the MMTB reserved the right to convert to electric, and so trams survived on this route.¹⁶⁷ The decision to put trams back on Bourke St was made in 1943, but took a long time to implement.¹⁶⁸

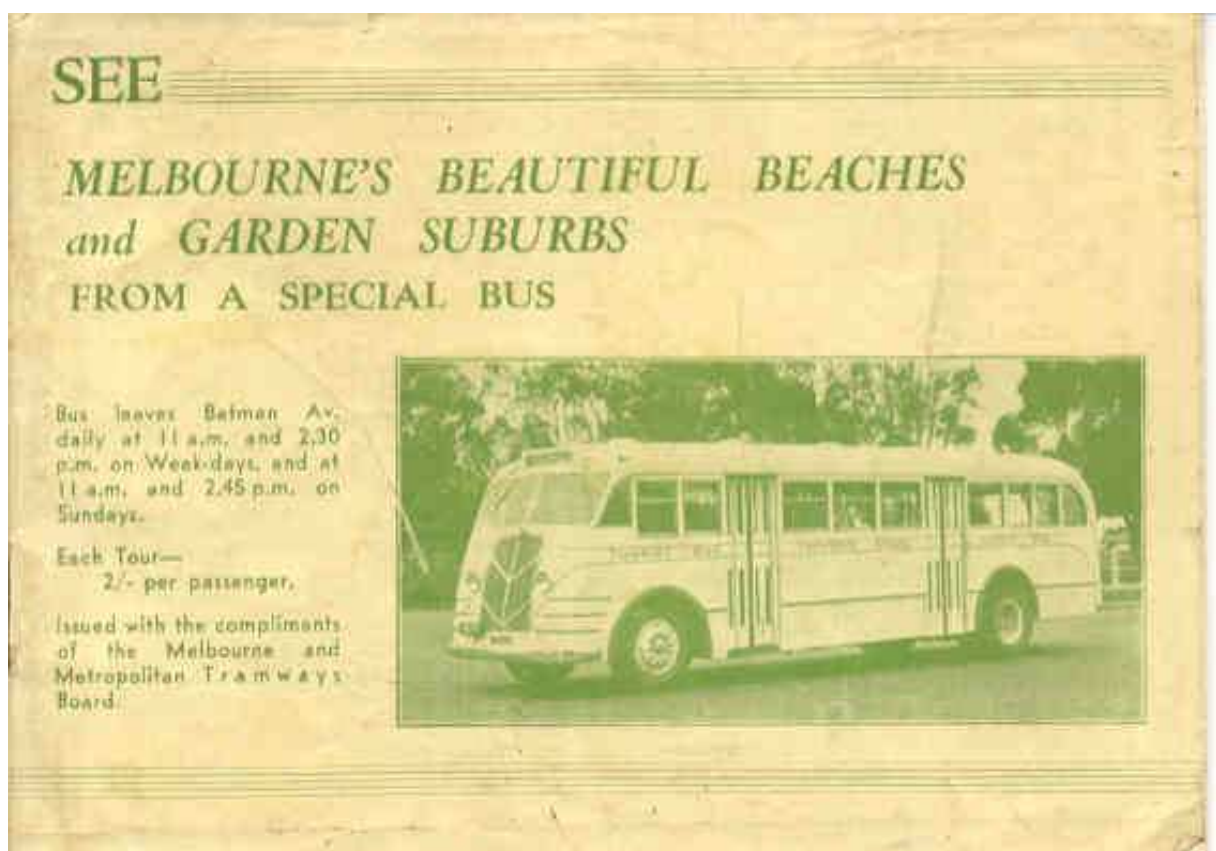


Figure 66: promotional flyer for MMTB excursion bus (Warren Doubleday)

¹⁶⁶ Melbourne & Metropolitan Tramways Board, 1930, *Melbourne & Metropolitan Tramways Board – Its Progress and Development 1919-1929*

¹⁶⁷ Russell Jones. 'Hector Hercules Bell – ringing in the new' 2008

¹⁶⁸ Graeme Turnbull, *The development and retention of Melbourne's trams and the influence of Sir Robert Risson*. 2002.

4.0 SOCIAL AND RECREATION (THEME 9.1)

4.1 Wartime efforts

During both World Wars 1 and 2 (and to a lesser extent other conflicts) the tramways exercised a strong social responsibility both in supporting the war effort through the enlistment of many staff members and in morale-boosting efforts on the home front. This is commemorated in elaborate honour rolls in several depots. One such honour roll designed by H B Herbert, was unveiled by the Premier Lawson in November 1921 at the MMBW offices. This commemorated the 518 tramway men who enlisted, 71 of whom fell on service aboard and 18 of whom received awards for conspicuous gallantry.¹⁶⁹ A large number of honour boards were specially prepared by the MMTB following World War II, for erecting in all of the depots, workshops and offices. Most of these are now in the Malvern Tramway museum. The Essendon Depot honour board from the first world war, which was erected by the private NMELTCo.¹⁷⁰



Figure 67: Honour board from MMTB Head Office (Malvern Tramway Museum)

To cater for shift workers some tram routes extended services to 24 hours a day. Trams were also a popular means of transport for soldiers when in town. Fuel rationing limited the use of private cars and resulted in highly patronised tram services. In order to reduce crush loads and conserve energy, Melburnians were urged to limit their travel to essential business only.

In the Second World War, women were entering a number of male dominated trades due to labour shortages, but there was opposition on the tramways as they were seen as a threat to job security and there was also doubt as to whether women could competently do the work. While not being allowed to drive trams, female conductors proved successful and were employed throughout the war and were paid full men's wages.. The MMTB workshops were also used for

¹⁶⁹ *The Argus*, 9 November 1p21, p.12

¹⁷⁰ Lenore Frost from Essendon Historical Society is still researching this board's whereabouts (pers com, Robert Green and Norm Maddock).

construction of pontoons and Bren gun carriers for the war effort. When the war finally ended, the servicemen returned to their positions with the MMTB and the women were retrenched but many women were once again employed by the tramways during the post war boom.

4.2 Industrial relations, Unions and Women

The co-founder of the MT&OCo, F.B. Clapp, was opposed to unionism, and in the early days of the cable trams, sacked 18 employees who tried to start a union, although it is likely that they actually intended to establish the friendly society at the time. This would have been the Mutual Benefit Society, which was ultimately established by the tramways employees had its genesis (like the tramways bands) in the Melbourne Tramway & Omnibus Company when it was established in 1888 to provide assistance through medical, insurance sick and funeral funds.¹⁷¹

A separate Melbourne Brunswick & Coburg Tramways Club had previously operated within that depot for the same purpose, and it might be assumed the two combined under the MMTB. With a name change to the Tramways Friendly Society a centenary was celebrated in 1988, when it was able to demonstrate a wide range of facilities, including a private hospital for members 'Vimy House' first established in 1949 at 25 Queens Road, and then expanding in 1961 into the adjoining property 'Bathurst.'

In 1970, the society office and hospital in Queens Road was sold and the site of Dr Penfold's home in Studley Avenue Kew was purchased by the society in 1971 and a new hospital costing a million dollars was erected, to be officially opened by the premier R J Hamer in 1975. This remains the only employee organisation in Australia to have run its own hospital. In 1985 the Karinya Nursing Home in Camberwell was purchased by the society to provide aged accommodation to both tramway members and the general public¹⁷²

The unions were among the most active and militant at times. Their affiliation was with other transport workers, but they maintained a strong independent identity of many decades, as was represented on the elaborately painted banners.

¹⁷¹ Report of the Registrar of Friendly Societies for the years ending the 31st December, 1887 and the 31st December 1888. p.4 (copy provided by Robert Green)

¹⁷² Catherine M. Grutzner, Tramways Friendly Society Centenary 1888-1988 A Short history, Tramway Friendly Society Melbourne



Figure 68: Banner - Australian Railways Union, Victorian Branch, c 1911, (Museum Victoria Reg. No: HT 1115)



Figure 69: Banner - Australian Tramway Employees Association, Victorian Branch, 1916 (Museum Victoria Reg. No: HT 10044)

The amalgamation of the three rail unions - the all-grades Australian Railways Union (ARU), the Australian Federated Union of Locomotive Enginenen (AFULE), the small National Union of

Railway Workers (NURWA) - and the Amalgamated Tramways and Motor Omnibus Employees Association (ATMOEA) united some of Australia's oldest and most colourful unions, founders of the Trades and Labor Councils, the Labor Party and the Australian Council of Trade Unions (ACTU).

These unions survived catastrophic defeats such as the 1912 Brisbane Tramway Strike and the 1917 Railways Strike in NSW, both of which turned into massive general strikes and social and political confrontations.

Formed in 1910, the Australian Tramway Employees' Association became the *Australian Tramway and Motor Omnibus Employees' Association* [AT&MOEA] in 1934. When this union was deregistered in 1950 over the one man tram dispute in Melbourne, its members created, within the same year, a new union of the same name.¹⁷³

ATMOEA represented tramway workers and for a considerable time opposed the hiring of female employees due to the lower wage they were paid. However, during the Second World War women started to be employed by the MMTB as conductors due to severe labour shortages. Preference was given to wives of MMTB employees on active service, followed by wives of other servicemen.



Figure 70: ATEA members of the ESCo with union banner c 1914 depicting P&MTT C class No 30 tram.(Warren Doubleday)

¹⁷³ A Short History of the RTBU. <http://www.rtbu-nat.asn.au/>

The Melbourne tramways provided an important venue for playing out matters of worker and class struggle. At one point women were practically excluded from employment as social mores and prejudice considered tram drivers, conductors and other roles as male only, Women were confined to... *opening the bell punch to empty out the clippings of different coloured card (corresponding to different fares) onto a counting table.*¹⁷⁴



Figure 71: Conductress changing the destination sign on VR tram, St Kilda to Brighton route (State Library of Victoria)

Lasting until 1993, the AT&MOEA eventually merged with the Australian Federated Union of Locomotive Enginemen, the National Union of Rail Workers and the Australian Railways Union to form the Australian Rail Tram & Bus Industry Union.¹⁷⁵ Originally called the Public Transport Union, the name was changed in 1998 to Rail Tram & Bus Union because of the impact of privatisation on the union's identity.

¹⁷⁴ Bevege, Margaret, 'Women's Struggle to Become Tram Drivers in Melbourne, 1956-75', in Windschuttle, Elizabeth (ed.), *Women, Class and History : Feminist Perspectives on Australia, 1788-1978*, Australian Society for the Study of Labour History, Sydney, 1980, pp. 437-452. Russell Jones, 2003, 'Women in the tramways,' Friends of the Hawthorn Tram Depot, <http://www.hawthorntramdepot.org.au/papers/women.htm>

¹⁷⁵ <http://www.atua.org.au/biogs/ALE0272b.htm>

Chart 20
TRADE UNIONS - PUBLIC TRANSPORT

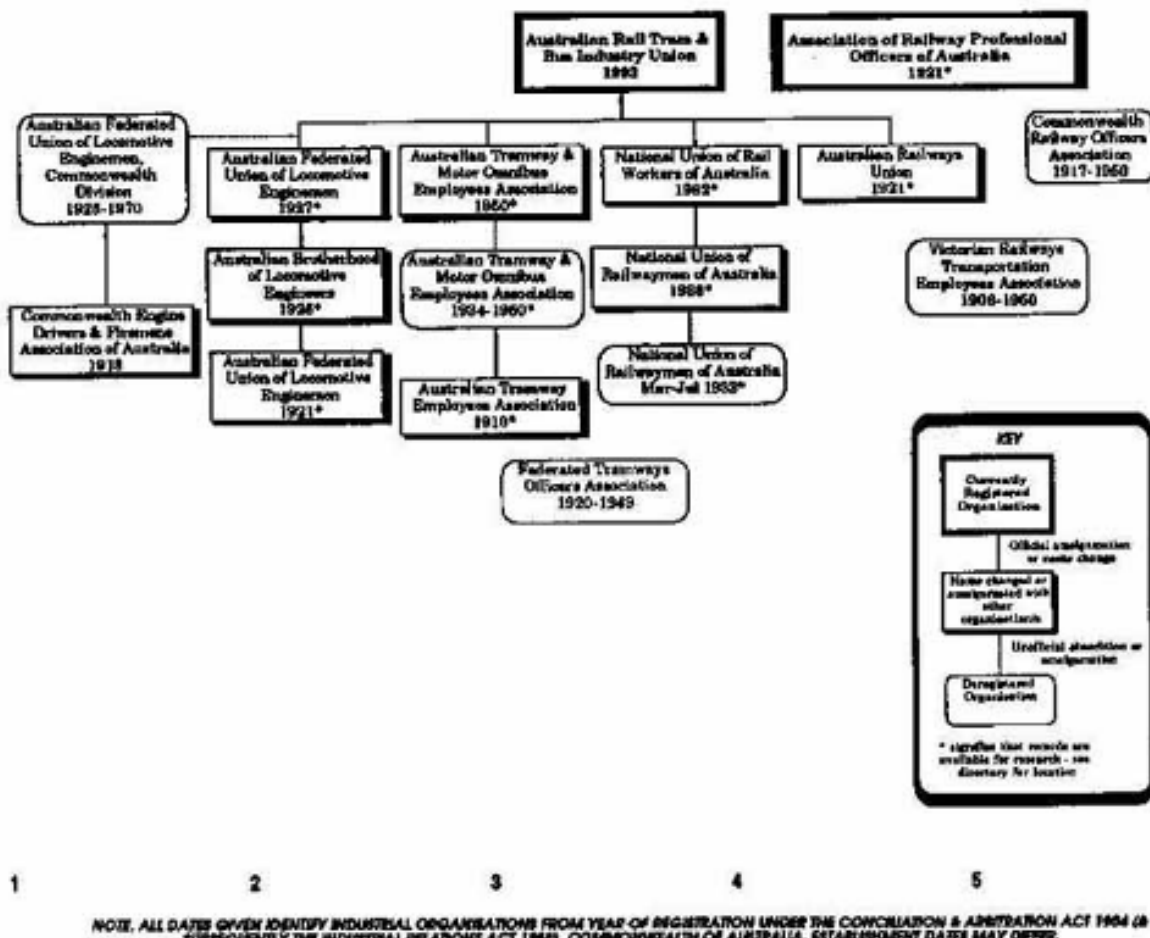


Figure 72: Structure of Public Transport Unions.¹⁷⁶

The ultimate face off between the Union and government came in 1990, when the Cain government wanted to introduce a new scratch ticket system, and with it no longer employ ticket conductors. This resulting in one of the most protracted transport strikes Victoria has seen. On January 1, 1990, after a rumour spread workers were to be locked out of the depots, drivers took 250 trams out on the streets and parked them in Melbourne's CBD in protest. Then transport minister Jim Kennan retaliated by shutting down the power grid. The trams did not budge for 33 days. Ultimately, conductors departed in 1998, the wind down happening over a number of years.¹⁷⁷

¹⁷⁶ 'Chart 20: Trade Unions - Public Transport', in *Parties to the Award*, 2002 <http://www.atua.org.au/ptta/041.html>

¹⁷⁷ 'Back to days when trams stood still', *The Age*, January 16 2010



Figure 73: Union badges in BTM Collection, btm1947 and btm1947 (Warren Doubleday)



Figure 74: Ms Julie Di-Mieri makes her protest on board a tram in the Bourke Street Mall during a public transport stop work, Dec 5, 1989. (Photo: Stuart Hannigan)



Figure 75: For 33 days from January 1, 1990, 250 trams were parked in Melbourne's CBD streets by striking tram drivers. (Photo: John Lamb)



Figure 76: Australian Rail, Tram and Bus Industry Union Banner during 1990 tram strike.

4.2.1 Tramway Bands

Two brass bands have existed over the course of the history of Melbourne's Tramways. The first was established by workers of the Melbourne Tramways and Omnibus company. The second initially formed among workers of the P&MTT, and later forming into the Melbourne tramways Band.

Originally known as the 'Melbourne Tramways Employees Band', the band was formed in 1888 by the Melbourne Tramway & Omnibus Company. The bandsmen were all serving employees and appear to have been paid for their services. Prior to World War 1, the band was very well known for its regular concerts at the South Melbourne beach. With the development of the individual tramway trusts, formed to implement the suburban electric tram networks, the band's role was lost to the various bands formed by the new trusts.¹⁷⁸



Figure 77: Coburg Tramway Band c. 1920 (<http://www.ibew.org.uk/vbbp-oz.htm>)

A separate Malvern Tramways Band formed from members of the P&MTT staff while the Coburg Tramways Trust also supported a brass band made up of its staff, and going by the name of the Coburg Tramway Band.¹⁷⁹ Saturday concerts by the Prahran, Malvern and St. Kilda Bands, and the newly formed Tramway Band, made up of 30 P&MTT employees, were inaugurated in 1911 at the Kiosk in Wattle Tree road, with the express purpose of popularising the Burke Road tramline. The Melbourne Tramways Band played mostly on the St Kilda Esplanade in the early 19th century under band master Thomas Wilks.¹⁸⁰



Figure 78: Malvern Tramway Band c1915, (<http://www.ibew.org.uk/vbbp-oz.htm>)

¹⁷⁸ <http://www.melbtramband.org.au/>

¹⁷⁹ Prentice, R. H. 'A Brief History of the Melbourne, Brunswick and Coburg Tramways Trust' in *Running Journal* July 1966, Tramway Museum Society of Victoria

¹⁸⁰ P&MTT Quarterly report to 30/3/11, 31/12/11, 31/3/12, copy provided by Robert Green.

Following the amalgamation of the MT&OC and the various electric tramway trusts to form the Melbourne & Metropolitan Tramways Board, a core tramways band was once again established in the late 1930's, involving serving employees from across the network. The band was formed from a core of employees working at the Hanna Street Depot in South Melbourne in 1939, and was initially called the Melbourne & Metropolitan Tramways Band. It became well known throughout the community for its public performances, particularly its monthly recitals at Wattle Park.¹⁸¹

In 1986 the band's name was changed to the Melbourne Transit Band, to reflect the re-organization of Melbourne's public transport infrastructure. In March 2001 however, the band gained approval to acknowledge its history and return to the name by which it is best recognized - the Melbourne Tramways Band. Although the band retains its strong links with Melbourne's public transport services, it has long been community based, comprising musicians "who give freely of their time to ensure valued traditions are maintained and to promote the benefits of public transport."

The Tramways Band now presents two major ensembles: the original brass band and its stage band 'Transition'. Due mainly to its regular concert commitments, the band's emphasis is on entertaining rather than contesting and it is able to present a wide range of music from classical to swing and traditional marches.¹⁸²

4.3 Migrant Experience (Theme 2.6)

The tramways served as an important employment source for post war migrants to Australia. Availability of training, a regular intake and turn-over, and the willingness of the tramways board to forgo the sort of prejudice that limited foreigner's work opportunities led to a distinctive culture within the tramways.

4.3.1 Recruitment

Obtaining employees of suitable skills was not always straightforward for the tramways. Training was provided on the job, and with greater sophistication of the system in dedicated driver's schools. In the post war period, patronage grew, and Arbitration Court rulings for the 40 hour week, caused labour shortages, the Board visited London to recruit 1,000 single men between 23 and 30. The Board also purchased three properties for use as guesthouses to provide for the first 12 months lodging for the new recruits. By 1952 up to 729 men had been recruited and the two guesthouses (208 Canterbury Road Camberwell, former Malone's Family Hotel and 409 Burwood Road Hawthorn 'Cavendish' the third was 'Warwick' in East Malvern, purchased Nov 1950).¹⁸³ then operating provided accommodation for 450. further recruiting was undertaken in 1955 (74 men and women) 1956, (473 recruits since February 1955) and 1947 (214 during the year). Around October 1956, the Immigration Authority took over the role of recruiting until the scheme ceased in July 1957.¹⁸⁴

Further labour shortages occurred in the 1960s, so the Board again sent its employment officer to Britain in November 1963 to recruit conductors there. A display was set up at Victoria House

¹⁸¹ The Tramways Band, Appearance in South Street Competitions, MMTB Tramway Topics, 7 1948.; 50th anniversary Wattle Park Recital, 14 April 1991 Friends of Wattle Park Newsletter No 8 September 1993 p.6-7. (copies provided by Robert Green)

¹⁸² Melbourne Tramways Band - *a short history*. <http://www.melbtramband.org.au/>

¹⁸³ MMTB Annual Report 1951, p.8

¹⁸⁴ MMTB recruitment of staff Extracts from Annual Reports of the MMTB ending 30 June 1951-57, transcriptions provided by Robert Green.

London in 1967 to promote recruitment for tram conductors.¹⁸⁵ Other buildings purchased by the tramways for use as hostels included 'Bundarra' 15 Grosvenor Crt. Toorak, Hyalite' 601 Toorak Rd Toorak, and 'Invercarvon' Burnett Street St. Kilda.¹⁸⁶



Figure 79: Recruitment tram float during World War I (State Library Victoria)

4.4 Tourism, Recreation and Trams

4.4.1 Tourist Services

The tourist potential of the tramways was recognised early on in its development. While the cable system served travellers to the beach on the St. Kilda and Couth Melbourne Lines, the operators were aware of the advantages of developing this trade as it extended patronage beyond the normal peak hours, potentially filled the empty returning trams and provided for week end revenue services. Special 'Beach tickets' and 'Bath Tickets' for both tram travel and admittance, were sold from 1893 and remained on sale until 1912. A guide book extolling the benefits of 'Rambles from the routes' was also sold¹⁸⁷

The Royal Park Horse Tramway relied on a local tourist market to the zoo, while the electric tram system promoted destinations such as St Kilda Esplanade and Luna Park. The Wattle Park Chalet and several other refreshment kiosks were established either directly by the tramways, or as adjuncts to council facilities.

In 1927 the MMTB inaugurated a special tourist tram service using a specially constructed observation car, running from Batman Avenue to St Kilda Beach via South Yarra, returning via Hawthorn and Kew. While this was short-lived, a new tourist service was commenced using the restored toastrack tram V214, in February 1979, between Princess Bridge and the Hawthorn Depot. Other trams such as X2-767 were also restored at this time to create the beginnings of the heritage fleet. Other innovations included free Sunday travel in 1981, a restored L class service to the zoo, and four Y1 class trams serving trips to St Kilda.¹⁸⁸

The City Circle free service (route 35) was instigated under Premier Jeff Kennet using restored Y class trams in 1994. The trams were painted in a special maroon and green with yellow and gold

¹⁸⁵ MMTB Annual Report 1964, p.17; 1967.

¹⁸⁶ List provided by Robert Green, from unknown source.

¹⁸⁷ Robert Green 'Trams and Tourism', 1994, typescript, copy supplied by the author.

¹⁸⁸ Robert Green 'Trams and Tourism', pp4-7.

trimmings, and a small track extension along Spring Street was constructed to enable a complete CBD loop. Later extensions into the Dockland were created as these lines were constructed.

The development of recreational destinations was an important aspect of the tramways work, leading not only to the creation of Wattle Park, but a range of facilities such as tea rooms, cafes, sea baths, as well as promotion of existing attractions that could be readily tied into a tram trip. For example the Zoo tram, was promoted as a distinct journey on the West Brunswick Line with advertising material focussing on the destination, while the picturesque route through Royal Park was itself part of an enjoyable Sunday outing.



Figure 80: Promotional poster for tourist tram service (courtesy Warren Doubleday)



Figure 81: Promotional Map for recreations tram journeys

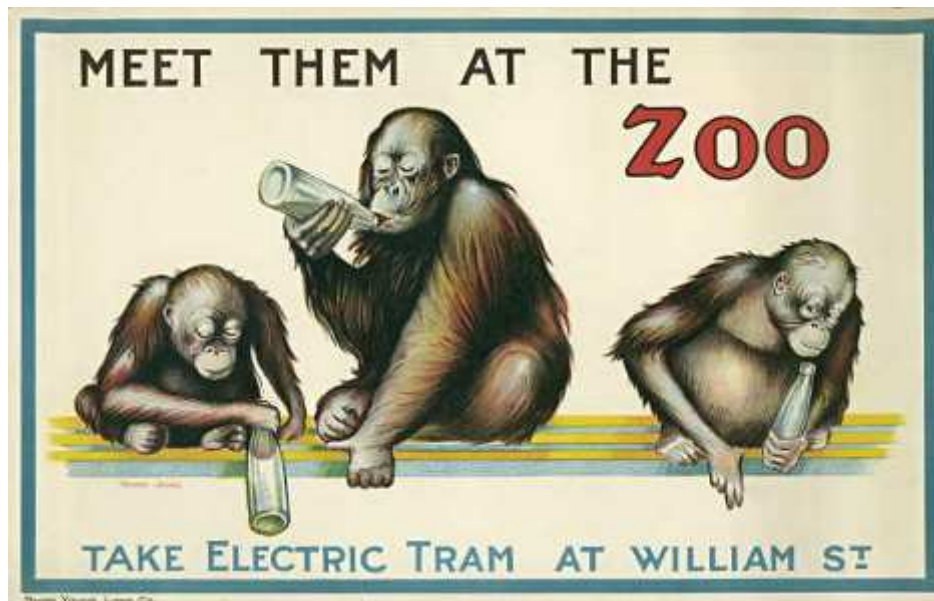


Figure 82: *Meet them at the Zoo - take electric tram at William St.* Vernon Jones. Vernon Jones. [ca. 1930 - ca. 1939] State Library of Victoria, Accession No: H2007.115/13)

Tourist services were therefore an early development in the tramways. They were expanded in postwar periods, not only to continue to policy of routing trams so that worker and commuter suburbs could directly access recreation facilities such as the sports grounds, parks and beaches, but also dedicated tourism services designed to promote and cater for Melbourne's overseas and interstate visitors.

From the 1970s, dedicated tourist services were operated using vintage rolling stock, including the open 'toast rack' type of car. In more recent decades the tourist attraction of the trams themselves has been recognised in the development of the free city circle tram route, with its distinctively painted W class trams.

4.4.2 Wattle Park

In 1915 the Hawthorn Tramways Trust purchased and developed Wattle Park as both a civic duty and economic project, in conjunction with the extension of the tramline eastwards along Riversdale Road to the Warrigal Road intersection through what were then largely open paddocks. This site became an important element in the MMTB's extracurricular activities. A Chalet was built in 1928, using material salvaged from demolished cable tram engine houses and depots, and roof slates from the Yarra Bend Asylum to the design of A.G. Monsborough, the architect for the MMTB.

Cable tram bodies were set up in the grounds as picnic shelters, later replaced with two W2 tram bodies. These were vandalised in 2005 and replaced with W5 and W6 bodies in 2007.¹⁸⁹

¹⁸⁹ Historic tram ruined during arson attack. <http://www.railpage.com.au/f-p255235.htm>; Wattle Park Trams Back on Track Burwood Bulletin No. 107 (Summer 2007-8)



Figure 83: Wattle Park chalet, newly constructed. (MMTB official photograph)

4.4.3 Tramway Baths

In addition to the attractions of the sea, dedicated facilities were constructed from the turn of the century for bathing, which would protect the bather's modesty. Among the many sea baths constructed along the Port Phillip Bay shoreline, the Tramway Baths were erected near Victoria Avenue in Albert Park not far from the South Melbourne cable tram car sheds. This may have had some affiliation with the South Melbourne Cable tramway, or simply taken its name from the convenient transport nearby.

The St Kilda Beach Esplanade terminus of the P&MTT Balaclava Road line was adjacent to both the Luna Park amusement park and the Palais theatre, at the time the largest theatre/cinema in the Southern Hemisphere. As a result of tramway traffic generated by these popular attractions and the adjacent sandy pleasure beach, special tram services led to congestion at the Esplanade terminus, slowing down tram shunting and causing subsequent delays to scheduled services. As a result, a balloon loop was opened at the terminus to remove the need to change ends when shunting, being brought into traffic on 1 March 1916. Construction of the loop required the compulsory acquisition of vacant land at the terminus.

A café, small shop, waiting shed and conveniences were constructed within the loop. The revenue generated by rentals more than offset the cost of interest generated by the acquisition of the land and construction of the buildings, the buildings being completed in late 1916. The tenant of the commercial facilities, a Mrs Leonard, opened the café on 20 December 1916. The landscaping of the grounds surrounding the café was designed by Carlo Catani (former chief engineer of the Public Works Department) and a Mr Ashley, the curator of the St Kilda Foreshore Committee.

Other kiosks included the Point Ormond Kiosk at the electric tram terminus, Oakrood Tea Gardens at the St Kilda Beach terminus.

4.4.4 St Kilda Kiosk – Luna Park Loop

The Luna Park Café, later named the “Green Knoll” was built by the Prahran and Malvern Tramway Trust on the terminus loop island on the Upper Esplanade in St Kilda in 1916.¹⁹⁰

The building, to a design of architect H B Gibbs and Finley was of an unusual form with circular pavilions, evidently intended to attract tourists by its quirky character.¹⁹¹

¹⁹⁰ The Argus Monday 7 August 1916 p.10,

4.4.5 Malvern Central Park

The Central Park Kiosk was constructed about 1912 as an entertainment and recreation facility by the Malvern Council, who had purchased the 18 acre site in 1906. Its relationship to the tramways is unclear, but like Wattle Park, it provided amenities to tramway trust and other municipal employees, and enhanced the destination in order to encourage patronage on the tramway.



Figure 84: Central Park Kiosk, c1912, (State Library H86.98/272)

4.5 Art Trams and Trams in Art (Theme 9.4)

In 1979, a number of artists were commissioned by the Ministry for the Arts to paint Melbourne trams as part of a program to take art to the public in an imaginative way and to arouse interest in what contemporary artists were doing. Over the following four years, a total of 16 trams were painted. The workmen at the Preston Workshops where the trams were painted were interested observers of the works in progress. Howard Arkley created his tram in 1980 which remained on the streets for eight years. In total 39 painted trams in service from 1978 until 1993 were decorated by artists such as Michael Leunig, Clifton Pugh, David Larwill and Lin Onus.¹⁹² A number of amateur artists are also producing tram themed artworks, which may have a ready market among enthusiasts.

Trams have also featured prominently in many artworks, which while not unusual, reinforce the role of trams in the popular imagination. A sample of some examples of trams in art is shown below.

¹⁹¹ *Prahran Chronical* Sat 6 January 1917.

¹⁹² Chris Johnston, "Tram graveyard yields an art treasure" *The Age* June 7 2002



Figure 85: Mirka Mora's tram

Howard Arkley Drawing for decorated tram project [Tram drawing] 1980, National Gallery of Australia



C. H. Percival, The last tram. c.1925



Yvonne Boyd, Melbourne tram 1944

Max Dupain Melbourne-waiting for the tram 1946, National Gallery of Australia

Charles Blackman, Tram Stop 1953, National Gallery of Australia



John Banagan Tram, St Kilda (1982), printed (c. 1992) cibachrome photograph, National Gallery of Victoria.



Richard Maurovic Tram stop St Kilda. Masterpiece Gallery (private sale)

Wayne Bateman, Tram at Glenferrie (1991)



HAHA Melbourne tram. Stencil art, 2004, National Gallery of Australia



Judith Alexandrovics People Are Individuals,
University of Tasmania Fine Art Collection.



Linda MacAulay Melbourne Tram



Michelle Hamer Give up your day job – tapestry
exhibited Fortyfivedownstairs Gallery



Peter Gerasimon, Jeff on the Move, A w-class tram
on Acland Street in St. Kilda, Melbourne



LinneaSwedishDesign Tram Roll - Tram no. 112

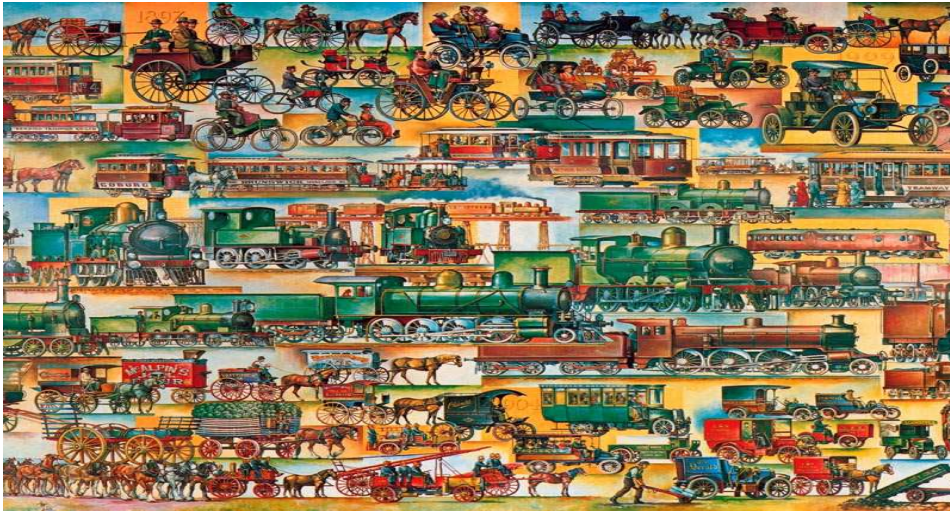


Figure 86: History of Transport Mural.

The History of Transport mural was created by Harold Freedman (1915-99) for the foyer of Spencer Street Station and depicts transport in Victoria from 1835 to 1935. It was commissioned as the first of a series of public artworks by the Victorian Government following Freedman's appointment as State Artist in 1972. It includes all forms of transport, with trams featuring prominently. The enormous oil painting on canvas, measuring 36.6 long by 7.3m. high, was unveiled on 30 January 1978. In 2004, during the redevelopment of Spencer Street Station, the mural was removed to be restored and relocated to the renamed Southern Cross Station in 2006.

Trams featured prominently in several Moomba Parades, under the banner of “Trams on Parade” beginning in 2000, both historic trams and specially decorated and painted trams in a multicultural theme were run. The following year the links with the sub-continent, partly explored by Roberto D’Andrea, were continued with the “Tram Jatra Project”, held in Calcutta, India, in February 2001 and Melbourne in November 2001.¹⁹³

¹⁹³ chocolate studio <http://www.chocolatestudio.com.au/projects.html#item6>



Figure 87: Images of Trams on Parade, Moomba 2001.¹⁹⁴

As a showcase of Pakistani culture, the Melbourne to Karachi tram was commissioned for the 2006 Commonwealth Games, and a team of W-11 professional Pakistani vehicle decorators were invited to decorate the tram, which toured around the city for the duration of the games, playing Bhangra and Pakistani music. The name is based on the W-11 buses originally found in Karachi, Pakistan, which are a model of minibus famous for their entertainment value.

4.6 Commemoration

In addition to the role of trams in the Moomba Parade, there have been several events commemorating anniversaries of the tramways themselves, or where trams have been co-opted. The 100th anniversary of tramways in Melbourne was celebrated with a parade of vintage trams and static displays in 1985. the TMSV owned grip cable car 436 and trailer 299 were placed in the city square and commemorative plaques were unveiled in Burke St and the South East corner of Bourke and Elizabeth Streets (since removed).¹⁹⁵

In 2006, 100 years of continuous operation of electric trams was commemorated to recognise the commencement of the Victorian Railways service from St Kilda to Brighton from May 1906 and the private North Melbourne Electric Tramway and Lighting Company opened in October 1906.

In December 2009, Camberwell Depot celebrated its 75th anniversary and in May 2010 Malvern Depot reached 100 years of service.

¹⁹⁴ Z class tram commissioned by the City of Melbourne for the Commonwealth Games.
<http://www.myweb.net.au/mottram/trams/moomba2001/moomba2001.htm>

¹⁹⁵ *Trolley Wire* Feb 1986 p. 34.

The Box Hill to Doncaster Electric trams which operated in the 1880s has also been commemorated with a series of information panels along Station Street box hill, and a shelter near the site of the power house fashioned to resemble a toast rack tram seating arrangement.

An unusual celebrant features Melbourne trams, tram drivers and conductors in 26 June 1967, when the first worldwide linkup of television by satellite featured a W class heading out from South Melbourne depot early in the morning. This was selected as the iconic image of Melbourne to beam around the world to 23 countries for all of 1 min 30 a sec.¹⁹⁶

¹⁹⁶ MMTB *News* Vol. 4 No 6 June 1967.

5.0 PERSONALITIES

A number of prominent figures in the development and operation of Melbourne's Tramways are regularly credited with either being the driving force behind one or other company or tramway undertaking, or having been critical to the history of tramways through technical innovation, political intervention or achievements in protecting and improving the system. The following is an incomplete list of some of the major players.

5.1 C H James

James was initially a North Melbourne grocer, but became a very successful but unscrupulous land speculator land developer and sponsor of the Fairfield Park Tramway. In addition to his Fairfield venture he proposed horse tram from Picnic Point to Cheltenham through his own large tracts of land and campaigned to have the West Riding of the Shire of Moorabbin established as a separate shire.¹⁹⁷

5.2 George Duncan

George Smith Duncan (1852-1930) was a tramway and mining engineer. He was born in Dunedin New Zealand. Between 1879 and 1883, he was responsible for the development of the Dunedin cable tramway system. He was then appointed consulting engineer (and subsequently engineer) for the development of the Melbourne cable tramway system, a post he held until 1892. his brother James Duncan was also a shareholder of the Clifton Hill to Northcote & Preston Tramway Company.



Figure 88: George Smith Duncan, 1852-1930, chief engineer Melbourne Tramways Trust, Melbourne, c.1880¹⁹⁸.

¹⁹⁷ Sparks Fly between Harold Sparks and David Abbott , <http://localhistory.kingston.vic.gov.au/htm/article/315.htm>

¹⁹⁸ Part of Bruce Howard collection 1936- Romance of Australian trams photograph collection [picture] ca. 1870-1976. National Library Australia .pic-vn4778575

5.3 Francis Boardman Clapp

Francis Boardman Clapp was a Melbourne businessman who established the Melbourne Omnibus Company in 1869 with William McCulloch and Henry Hoyt. Clapp was instrumental in introducing cable trams to Melbourne after becoming aware of the success of the San Francisco system. He bought the Victorian patents of Andrew Hallidie's inventions in 1877 and changed the name of his company to the Melbourne Tramway & Omnibus Company Limited (M.T. & O.C. Ltd). He remained managing director until the takeover of MT&OC in 1916, when the franchise ran out.¹⁹⁹



Figure 89: Francis Boardman Clapp, 1833-1920.

5.4 F A McCarty

McCarty was a civil engineer, closely involved in the development of the Beaumaris Tramway Company.²⁰⁰ He was Also consulting Engineer to other tramways such as the FNPTT, in the partnership of McCarty & Underwood and has been described as “one of the best known electrical engineers in Australia, and consulting engineer to the 'Complex Ores Co’”.²⁰¹

5.5 Thomas Bent

Thomas Bent was a Land Boomer and politician, Treasurer and Premier, who is regarded as self serving in his public activities. He was instrumental in the approval of construction of the St. Kilda Brighton tramway, which directly benefited his bayside landholdings, overcoming department opposition from the Victorian Railways and using the term “Street Railway” to force them to build and operate tramways to Brighton and Sandringham. He was also involved in land deals associated with NMETL.²⁰²

¹⁹⁹ J. Ann Hone, 'Clapp, Francis Boardman (1833 - 1920)', *Australian Dictionary of Biography*, Volume 3, Melbourne University Press, 1969, pp 397-398.

²⁰⁰ Horse Trams From Cheltenham to Sandringham, <http://localhistory.kingston.vic.gov.au/html/article/98.htm>

²⁰¹ Harnessing The Great Lake. The Mercury (Hobart) Saturday 10 September 1910 p.8

²⁰² Weston Bate, 'Bent, Sir Thomas (1838 - 1909)', *Australian Dictionary of Biography*, Volume 3, Melbourne University Press, 1969, pp 144-146.

5.6 George C Clauscen

Clauscen, who moved to Northcote around 1885, purchasing the well known property 'Sunnyside', was instrumental in establishing the Clifton Hill to Northcote and Preston Tram Company in 1888 and was well connected with major players of the land boom being a co-director with Benjamin Fink in at least one company. This was a very "land boom company" in that its purpose was to bring the cable tram line to Northcote which it did at the height of the boom.²⁰³ He was ex- Mayor and also served on the Northcote Council between 1890 and 1892.²⁰⁴



Figure 90L George C Clauscen .²⁰⁵

5.7 Alexander Cameron

Cameron was the critical figure in recognising the potential of electric tramways and helping establish the Prahran & Malvern Tramways Trust , then going on to manage as the first full-time chairman of the newly constituted Melbourne & Metropolitan Tramways Board (MMTB). Chairman of the P&MTT for most of its existence and first chairman of the MMTB until 1935. He was responsible for setting the course for Melbourne's Tramways through his pioneering administration of tramways. In March 1923 Cameron went abroad to investigate traffic problems returning the next year with his long-held view confirmed that electric trams were superior to buses and that overhead wires were preferable to the underground conduit system. He continued to fight off criticisms that electric trams were noisy, that overhead wires disfigured the streets, and that trams caused congestion.²⁰⁶

²⁰³ Victoria and its Metropolis: Past and Present..

²⁰⁴ Lemon, Andrew. Northcote Side of the River. North Melbourne, Hargreen, 1983.

²⁰⁵ Darebin Historical Encyclopaedia.

²⁰⁶ Kathleen Thomson, 'Cameron, Alexander (1864 - 1940)', *Australian Dictionary of Biography*, Volume 7, [Melbourne University Press](http://adonline.anu.edu.au/biogs/A070534b.htm), 1979, pp 530-531. <http://adonline.anu.edu.au/biogs/A070534b.htm>

5.8 Alan G. Monsborough

Alan Monsborough was the principal architect of the MMTB, responsible for several of the depots, substations and other buildings including the former headquarters building at 616 Little Collins Street, the Tramway Signal Cabin in Swanston St. and the Wattle Park Chalet.

5.9 Hector Bell

Hector H Bell was a City of Richmond Councillor, HTT Board Member, and was appointed to the MMTB in 1919. He became the second chairman of the MMTB, replacing Cameron in 1935, had been a founding member of the Hawthorn Tramway Trust and appointed to the MMTB upon its formation in 1919. He also travelled abroad (in 1938 to Britain, Germany, America and Canada) to study the latest trends in transport management and was instrumental in modernising the fleet of trams and busses, and replacing the remaining cable trams.²⁰⁷

5.10 Sir Robert Risson

Sir Robert Risson was Chairman of the Melbourne & Metropolitan Tramways Board from 1949 to 1970. He was head of the Brisbane City Council (BCC) Transport Department, where he developed his tramway administration skills before taking on the role as Chairman of the MMTB in October 1949 and became its champion in a period when most Australian Cities were eliminating trams. Risson's strong personality saw him clash with unions as well as politicians, and while he championed the trams at a time when they were seen as out-dated, he also was known for introducing ticket inspection in Victoria. Premier Rupert Hamer, who strongly disliked Risson, eventually got rid of him. When he retired from the MMTB in 1970, he became the Executive Director of the Metropolitan Transportation Committee until 1978



Figure 91: Major-General R.J.H. Risson. Australian Army.

²⁰⁷ King & Wilson, 2007, p.10.



Figure 92: Chairmen of the MMTB 1919-70, *Running Journal* 6 no 3 Dec 1969.

5.11 Clarrie O'Shea

Clarence Lyell O'Shea, Clarrie O'Shea (1906 - 1988) was Victorian State Secretary of the Australian Tramway & Motor Omnibus Employees' Association who influenced the direction of the union in campaigning for workers' rights and privileges, particularly in the areas of shorter working hours, improved leave and sick pay allowances, and better retirement provisions. He campaigned against one-man operation on trams, and was famously gaoled in 1969 over failure to answer summonses and pay fines imposed by the Conciliation and Arbitration Court. This resulted in a general strike of over 500,000 workers across Australia on Friday, 16 May, and subsequent rolling stoppages, particularly in public transport.²⁰⁸



Figure 93: Clarrie O'Shea, State Library Victoria Image Number: hp004050 The Herald & Weekly Times Limited.

²⁰⁸ Brian McKinley, (1979) *A Documentary History of the Australian Labor Movement 1850-1975*,

5.12 Lou Di Gregorio

Lou Di Gregorio commenced with the tramways at Essendon tram depot in 1965. He became secretary of the tram union in November 1989 stepping down in February 2010. In 1985 as a union delegate, Mr Di Gregorio won his first serious fight, keeping the tram route from Footscray to Moonee Ponds open. "The [Cain] government made a decision to close it," he says. "I ran a very hard campaign, all the MPs in Labor in Parliament, I forced them to either support us or to not support the tram line."



Figure 94: Clay Lucas *The Age* November 13, 2010. Photo: Vince Caligiuri

6.0 DESCRIPTION OF HISTORICAL ELEMENTS

6.1 Tramway technology (Theme 5.2 manufacture)

6.1.1 Main layout of the tram system

Evidence of the late nineteenth century and early 20th century engineering works of Melbourne's tramway system abounds in the current extent of routes along Melbourne's roads. The tracks, overhead wires and trams are the most obvious and visible evidence of the continuing importance of tramways. However, the fabric which has direct and tangible associations with the creation and development of the tramways is less evident, with most of the track network having undergone regular replacement. All but a handful of vehicles on the system are of relatively modern construction, with 90% of rolling stock being less than 25 years old.

In the case of buildings, however, the situation is reversed, most of the current depots, administrative buildings, workshops, substations and the more substantial shelters date from before the middle of the twentieth century, and in many cases to the beginnings of the electric tramways. Other buildings, no longer employed as part of the operating system also survive, including a number of Cable Tram engine houses, and disused depot buildings.

A detailed inventory is provided of surviving tramway places, rolling stock and collections, but here they are summarised.

6.1.1.1 Cable Tramway System

Of the previous 12 engine houses, only five survive relatively intact, (Queensbury Street North Melbourne, Rathdown Street North Carlton, Gertrude Street Fitzroy, Brunswick Road Brunswick, and High Street Northcote), while two are only facades (City Road Port Melbourne and Johnston Street Fitzroy), one only retains a section of outer wall (Bridge Rd Richmond) and three have been extensively modified (Wellington Street Windsor, cnr. Chapel Street & Toorak Road South Yarra and cnr. St Kilda Road & Bromby Street South Yarra). Two have been completely demolished (Sydney Rd Brunswick, and cnr. Victoria Parade and Brunswick Rd Fitzroy although both may have surviving underfloor archaeological remains.

There were 16 cable car barns on the system, but few survive. Northcote was unusual in having the shed and engine house part of the same structure, with a similar arrangement at Rathdowne Street. There is a separate car shed building at the Toorak Engine house, detached and with its own entrance which may be the only relatively intact car barn. The facade of the Richmond car barn has been incorporated into a new building, but the shedding is gone. The Port Melbourne Car Shed of 1890 is possibly the most intact car shed of Melbourne's former cable tram system. It apparently contains the sole surviving in situ remnants of tracks of the cable tram system.

The Nicholson Street car workshops were converted to the electric then bus depot, but a pitched shed may still relate to the original structure. The most prominent building apart from the engine houses is the MT&OCo office in Bourke Street.

There is no known visible cable trackwork in Melbourne. Although an extensive section of buried track and cable tunnel was recently found in Abbotsford Street. The section of track at the west end of Bourke Street was removed about 15 years ago. Of the other Heritage Inventory listed places where trackwork may survive, the demolished Brunswick Street engine house is one

of the more likely to reveal archaeological evidence in the form of engine flywheel and cable tensioner pits and sheave or wheel pits in the roadway.²⁰⁹



Figure 95: Cable tram slot and track at western end of Bourke Street c 1988²¹⁰

6.1.1.2 Electric Tramway System

There were 15 electric tram depots on the system at one time or another but not all in operation at the same time. Most of these survive in some form. Some of the earliest large depots from the Tramway Trust period, Essendon, Malvern, Hawthorn Camberwell, are intact. Some smaller depots such as Hannah Street South Melbourne, East Coburg, Footscray and Thornbury (also known as Preston or West Preston) have been demolished. The later depots, Glenhuntly, East Preston, Brunswick, Kew, are substantial and in some cases architecturally elaborate and demonstrate the period of expansion of the system in the mid 20th century under the MMTB. There is very little remaining from the Victorian Railways trams, with a shed at Sandringham possibly the only substantial structure.

different names for this depot, the one opposite Preston workshops, I have seen Preston and West Preston and Thornbury, we need to be consistent - Thornbury is the better one I think.

There are potentially archaeological remains of various components of the system including the site of the Doncaster tram engine house, former cable tram engine house subfloor areas (Brunswick, South Melbourne) and sections of track where later electric tram conversions did not require them to be lifted (such as Rathdowne Street). These sites could add to understanding and interpretation, but these are mainly unrealised, apart from the section of cable track and tunnel in Abbotsford Street.

²⁰⁹ Lancelloti, Lucia, & Green, Robert, n.d. "The Fitzroy Cable Tram engine House (And part of the road reserve), 81-89 and part of 93-103 Victoria Parade Fitzroy: the identification of potential Archaeological Remains." Unpublished report Heritage Victoria; Ellis, A, 2007, Archaeological recording: Cable Tram Tracks Abbotsford Street, North Melbourne. report prepared for Heritage Victoria June 2007.

²¹⁰ http://vhd.heritage.vic.gov.au/#large_image_carousel:64418:0

Figure 96: Melbourne's Tramways at greatest extent of cable lines & prior to the formation of MMTB

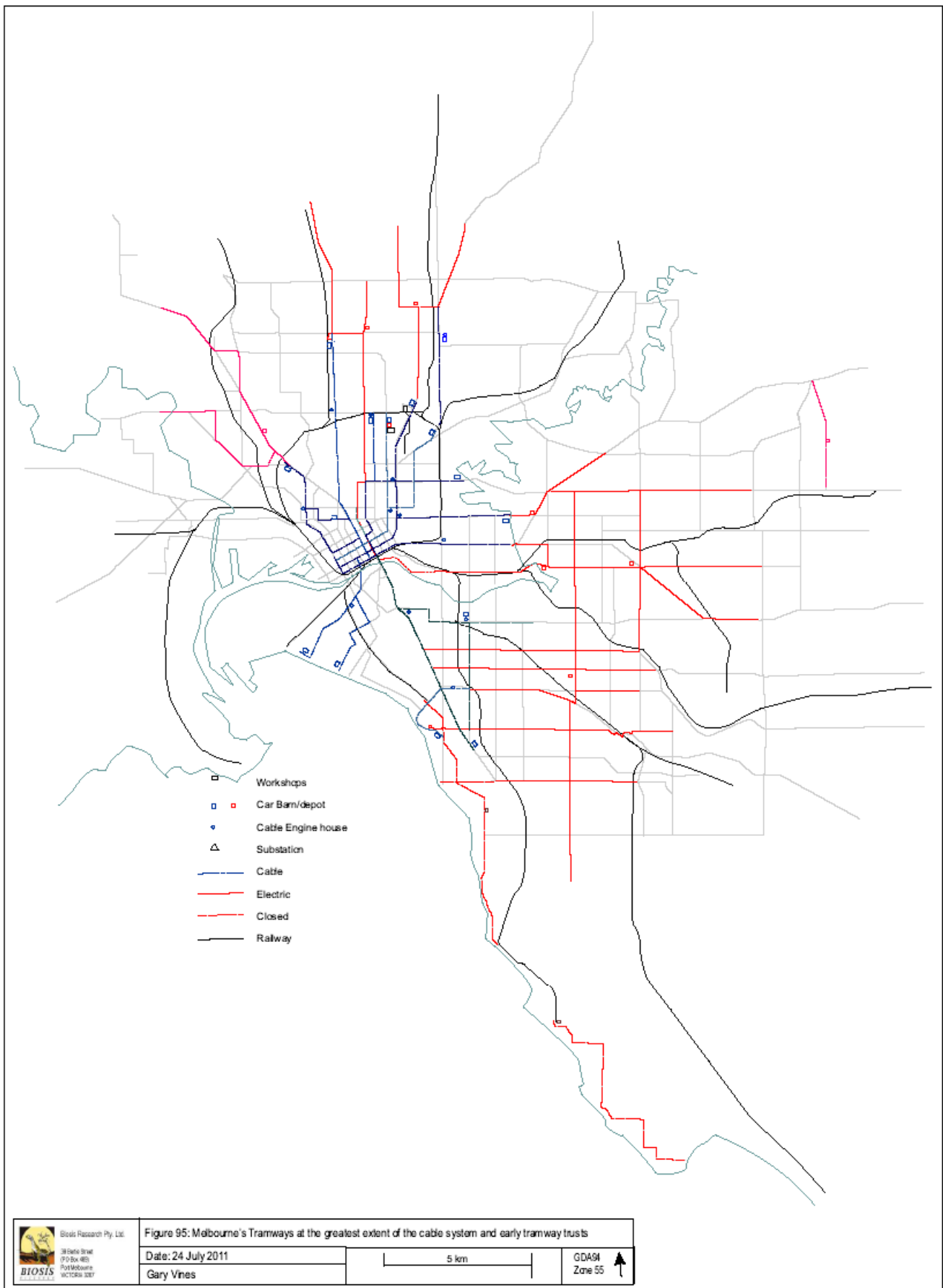
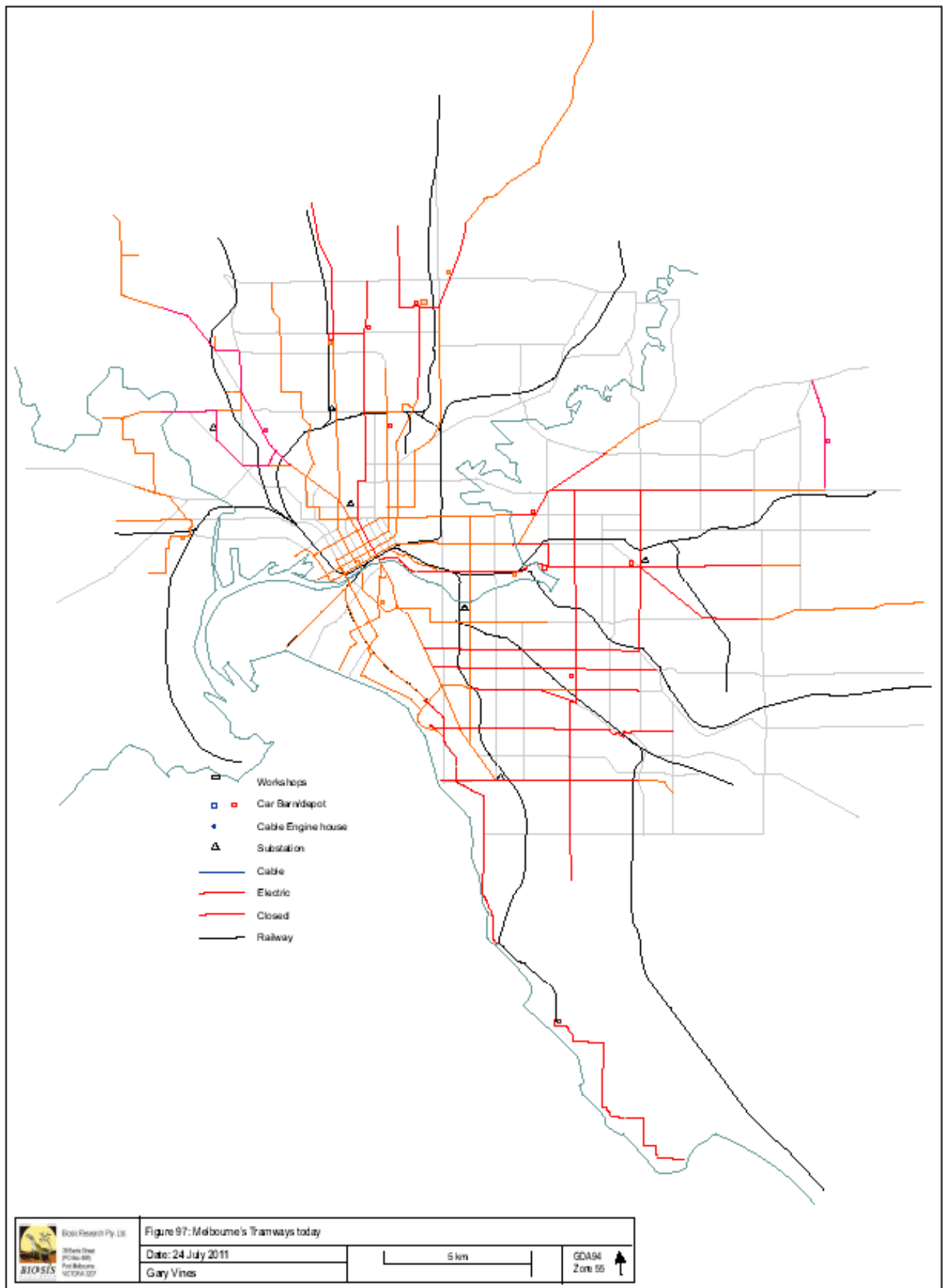


Figure 97: Melbourne's Tramways at its present extent



6.2 Rolling Stock, motive power and controllers

Melbourne's Tramways are recognised in the public mind as much for the tramcars as any other element. The trams can be considered moveable cultural heritage, and in fact are best appreciated when moving. When recognisably historic trams are in use, they take on the character of an historic place, but one found in a different location each time. Therefore, seeing a W class in normal operation might recall an image of historical Melbourne, even if the context is a busy modern roadway amidst contemporary traffic and streetscapes.

What makes a tram an historic object (or even an historic place when come across in static display) is the recognition in its shape, style, finishes, details and character, something from the past. Tram design in Melbourne, prior to the introduction of the Z class, had more relationship to coach building, than modern motor vehicles (although other cities such as Adelaide and Brisbane introduced modernistic streamlines metal bodied trams on their systems from the 1930s).

The visibly distinctive design of trams was the result of a tradition going back to 17th century carriage building design. This included a shape which curved outwards gracefully from the narrower frames (probably intended to provide a harmonious transition), panelled frames and doors (where fitted) organic shapes in brackets and ironwork reflecting the traditional blacksmithing skills, decorative glass panels and inclusion of clerestory windows in the roof, and finely-finished polished timber, painted colour schemes, decorative linework, and company monograms.

The Green and Cream of the later MMTB livery was introduced in 1925 (supposedly to complement Melbourne's tree-lined boulevards). This colour scheme has become such an intrinsic sight in Melbourne tram travellers imagination, that there was an outcry when it was changed, and continues to be an issue with some, even spawning a "Melbourne Trams Should Be Green!" Facebook group.

The earliest trams probably took their design cues from railway carriages (which themselves developed from British stage coach designs). Early examples were imported, and soon locally manufactured (probably still closely following overseas patterns). Brill and Birney in the US was the major early provider of chassis and running gear, while James Moore & Sons Pty Ltd, a Melbourne timber joinery company and Duncan & Fraser of Adelaide, ere the major assemblers and coachbuilders until the MMTB commenced its own manufacture in Preston workshops.

6.2.1 Horse Trams

The horse trams used in Melbourne bear a strong physical and historical relationship with the cable trams introduced by Clapp in the 1880s. This relationship can be seen in the model used for promoting the MT&OCo at the Melbourne Exhibition, which was exhibited initially as a horse tramcar, but later displayed with a cable tram dummy car to demonstrate the appearance of the rolling stock for the new system. The horse trams tended to be small and simple, built on a four wheel truck.²¹¹ The cable trailer was based on the design of Stephenson of New York - a very common design, used in London as well. Equipment was confined to wheel or lever operated brakes, a bell, and shafts and harness, similar to that employed for centuries on horse-drawn wagons and carriages.

²¹¹ "truck" generally refers to a four wheel tram or single bogie.



Figure 98 Melbourne Tramway and Omnibus Co Ltd. Tramcar model from Melbourne Centennial Exhibition – 1888, exhibit No. 1152

6.2.2 Cable Trams

While little of the track work, cabling or drive engines and only a few examples of rolling stock from the cable era survive, the distinctive technology of cable trams is still evident in the few components. In Abbotsford Street North Melbourne, a section of abandoned and buried cable track and tunnel was unearthed recently.²¹² The grip mechanism was the key patent to making the system work, employing a geared lever which closes and opens a jaw set over the cable, to alternately drive and slow the tram. Brakes were hand lever operated friction type with curved shoes working against the wheels, or track brakes, where a timber block is pressed down directly on the track between the wheels.

Of the several hundred cable tram dummies and trailers, only a handful have survived, the original No 1 set was set aside six months before the final closure of the last line and donated to the Science Museum (now Museum Victoria). It was restored in 1975 at the Preston Workshops, and displayed for many years outside the Russel Street museum entrance.²¹³

Surviving cable trams include grip cars (Dummies) No 1 held by Museum Victoria. No. 28, and No. 436, Melbourne cable grip car is also held by the Powerhouse Museum Sydney. Trailers have fared better with Bogie cars #190, 192, 475, 485 and Standard cars #1, 256, 290, 299, 462, 469, 586 all held by the TMSV Bylands. Replica Trailer No 95 with Grip car powered by petrol motor are in used in Portland. A replica trailer and dummy car were built at Malvern Depot by trainees and are owned by the TMSV but on loan to the Hawthorn Tram Museum. ,

A cable grip mechanism is held at Scienceworks and another mechanism is believed to be held in the Powerhouse Museum Sydney, but may be a different model used on the Sydney cable trams.

²¹² Victorian Heritage Inventory H7822-0981 and VHR H0988.

²¹³ A Twentyman, The Melbourne Cable Tram Network, *Trolley Wire* October 1975, p.13

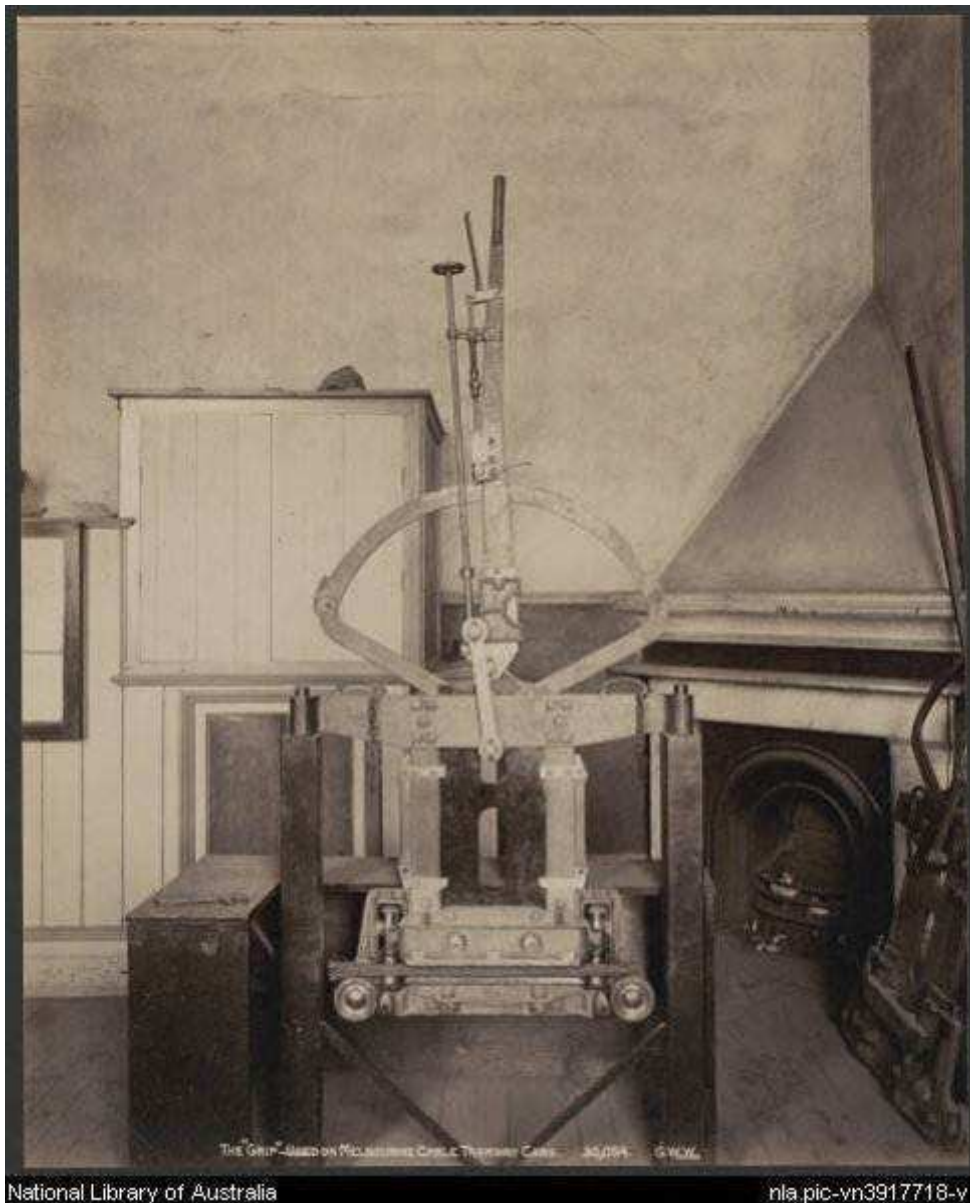


Figure 99: Cable Tram Grip mechanism

6.2.3 P&MTT cars

The P&MTT operated a variety of bogie tramcars, commencing in 1910 with 13 single truck California combination cars built in Adelaide by Duncan & Fraser. These were followed by seven more of the same type and then in 1912-14, several single-bogie drop-end open California combination cars, and maximum traction bogie drop centre & drop end combination cars also built by Duncan and Fraser.

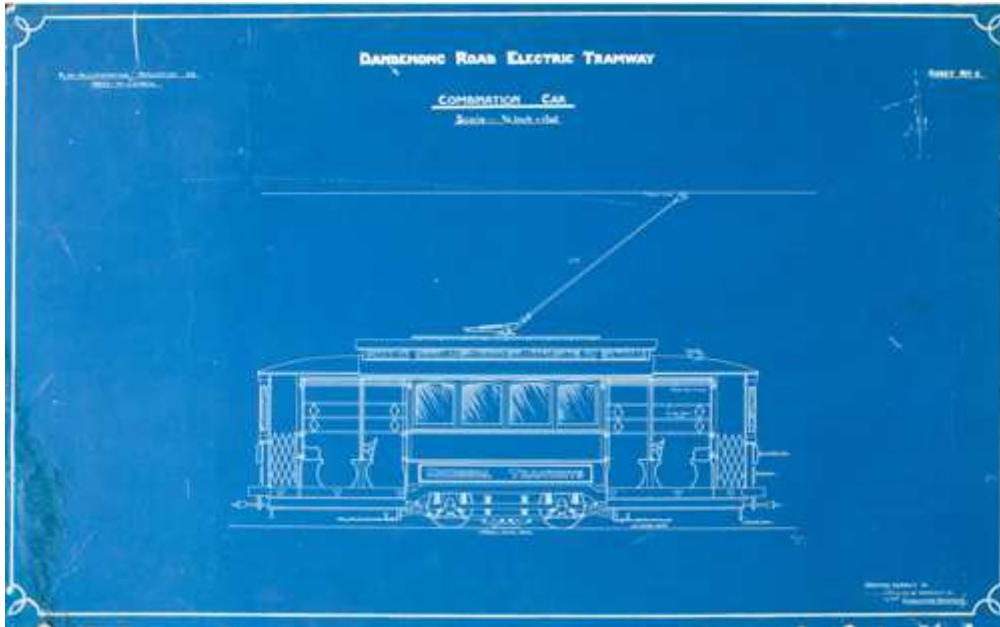


Figure 100: Dandenong Road combination car blueprint.²¹⁴

There then followed further series of tramcars built by the Meadowbank Manufacturing Company, by the PMTT's own Coldblo Road Workshops and by James Moore & Sons modified. These included innovations such as air brakes, some unusual two-bogie combination cars with the saloon at one end and crossbench seating and six bogie drop-centre tramcars fitted with equal-wheeled Brill 77E trucks, four motors and air brakes. These last were delivered after the MMTB takeover and influenced later designs forming the basis for W class. Also ordered were the L-class trams but these only entered service after MMTB takeover in 1920. They were the widest trams, and the first with four motors. They were very successful and formed a model for the design of the MMTB W class.

Preserved P&MTT trams include C 26 (now Bendigo Trust No 5.), C 35 (now Ballarat Tram Museum No. 40), E 40 (now at TMSV Bylands), E 41 (now Ballarat Tram Museum No.38), E 42 (now Ballarat Tram Museum No. 39), E 44 (now Bendigo Trust 44), E45 (now Bendigo Trust no. 18), and F 46 (P&MTT 36 now at TMSV Bylands). F46 and G53 are held by the Tramway Museum of Victoria for future restoration. A summary of trams operated on the PMTT system is available on the Hawthorn Tram Museum website.²¹⁵

No	MMTB class	Built	Car builder	Description	Seats	Truck	Control	Motors	Weight (tons)	Disposal
1-20	A	1910-11	Duncan & Fraser	Single truck drop-end California combination	36	Brill 21E	WH T1F	2 x 33hp WH 205	11.9	1926-31
21-24	O	1912	Duncan & Fraser	Maximum traction bogie closed combination (sold to HTT 1916)	54	Brill 22E	GE B23D	2 x 50hp GE 202	16.3	1927
25-35	C	1913	Duncan & Fraser	Maximum traction bogie drop centre drop end combination. Motors upgraded in 1918-20 to 2 x 65hp (GE 201G)	56	Brill 22E	GE B23D	2 x 50hp GE 202	17.3	1935-55
36	D	1914	Duncan & Fraser	Maximum traction bogie drop centre drop end combination (as for	56	Brill 22E	GE B23D	2 x 65hp GE	17.3	1940

²¹⁴ Stonnington Library <http://stonlib.stonnington.vic.gov.au/cgi-bin/spydus.exe/ENQ/PIC/BIBENQ?IRN=6480955&FMT=PA>

²¹⁵ Russell Jones. 2008, 'PMTT tramcar fleet', Friends of Hawthorn Tram Depot, <http://www.hawthorntramdepot.org.au/papers/pmtt-01.htm>

No	MMTB class	Built	Car builder	Description	Seats	Truck	Control	Motors	Weight (tons)	Disposal
				37-45 but modified in 1915 for conductresses)				201G		
37-45	E	1914	Duncan & Fraser	Maximum traction bogie drop centre drop end combination. Motors upgraded in 1917-19 to 2 x 65 hp (GE 201G)	56	Brill 22E	GE B23D	2 x 50hp GE 202	17.3	1943-51
46-47	F	1912	Duncan & Fraser	Single truck straight sill semi-open cross-bench (clerestory roof) - modified to combination car with reduced seating. No 46 originally numbered 36.	52/3 6	Brill 21E	WH T1F	2 x 33hp WH 205	11.3	1929
48-53	G	1913	Duncan & Fraser	Single truck straight sill semi-open cross-bench (vent arch roof) - modified in 1918 to combination car with reduced seating	52/3 4	Brill 21E	AEG	2 x 44hp U140	11.6	1929-32
54-63	H	1913	Duncan & Fraser	Single truck drop-end California combination	36	Brill 21E	AEG	2 x 44hp U140	11.9	1930-31
64-83	J	1915-16	Meadowbank Manufacturing Company	Single truck drop-end California combination	36	Brill 21E	AEG	2 x 44hp U140	12.0	1928-31
21-24 84-85	B	1916-17	PMTT Coldblo Rd Workshops	Single truck drop-end California combination	36	Brill 21E	GE B23D	2 x 50hp GE 202	12.0	1929-31
86-91	B	1917-18	PMTT Coldblo Rd Workshops	Single truck drop-end California combination	36	Brill 21E	GE B23D	2 x 50hp GE 202	12.0	1929-31
92-100	K	1919-20	James Moore & Sons	Single truck straight sill California combination	36	Brill 77E	GE B23D	2 x 50hp GE 202	12.9	1929-36
101-105	L	1921	James Moore & Sons	Four motor bogie drop centre combination	56	Brill 77E	GE K35AA2	4 x 40hp GE 247	19.1	1981-82
106	L	1921	James Moore & Sons	Four motor bogie drop centre combination	56	Brill 77E	GE PC5	4 x 40hp GE 247	19.1	1981
—	—	1915	PMTT Coldblo Rd Workshops	Works car fitted with rail cleaning and flushing equipment. Numbered 3A by MMTB (1927), then 6 (1934).	—	Brill 21E	WH T1F	2 x 44hp U140	11.0	1948

Table 6: Trams of the PMTT

6.2.4 Victorian Railways Cars

The Victorian Railways used trams of two different gauges the railway gauge of 5 ft 3 inches and the standard gauge of 4 ft 8 ½ inches. The trams were 4 wheel bogies, but following the loss of the original fleet in the 1907 fire, 14 replacement trams made at Newport Workshops trams included 7 California combinations cars (1-7) and seven toastrack trailers (8-14). 9 extra trams (19-27) built to increase the service were based on the Sydney J class trams, a single truck closed crossbench design. Twenty air brake equipped bogie drop centre, four motor trams (28-47), the first in Melbourne, were built at Newport Workshops and put into service in 1918 until 1923. The last four trams (44-47) were never completed. Twelve of the older trams were regauged and transferred to Sandringham for the opening of the Black Rock tramway in 1919, while the result were mostly sold or scrapped. In 1942 three new cars (52-54) of double bogie luxury cars were built based on the MMTB SW6 design, using some electrical equipment from the uncompleted cars (44-47). The California cars were withdrawn with the introduction of these new cars, but did return for some peak services when required until 1956 when they were scrapped.²¹⁶

Victorian Railways trams Nos. 20, 34, 41, 48, 49, 52, 53, are preserved in various collections.

²¹⁶ Victorian Railways - Electric Street Railways (VR Trams), <http://www.vicsig.net/index.php?page=trams§ion=vr>

6.2.5 HTT trams

The Hawthorn Tramway Trust fleet initially comprised eight single truck straight sill closed combination car bodies ordered from James Moore and Sons and assembled at P&MTT. It also obtained a number of bogie cars. The Melbourne Heritage fleet includes M114/HTT 8 and P138/HTT 32. Other preserved HTT trams include N119 (Ballarat No. 37), N120, N122, N123, N126 (Bendigo Tramways) P132 (Ballarat No. 36 at the Tramway Museum of Victoria), P133, (Bendigo No. 25 at the Bendigo Tramways), P137 (Ballarat No. 34 at Australian Electric Transport Museum), and P138, (MMTB 138 at the Bendigo Tramways). M class trams 111, 113, 116 and 186/9 are preserved at the Ballarat Tramway, while M 185, 187 and 188 are at Bendigo, 189 in storage), M184 (Ballarat No. 31 at Whiteman Park Tramway Museum) M107 (Bendigo No. 12), M110 (Bendigo No. 6). H55 is awaiting restoration at the Tramway Museum of Victoria and M183 became Ballarat No. 30), and was damaged by fire in a museum in Oregon, USA.²¹⁷

A summary of Hawthorn Tramway Trust rolling stock has been compiled from the

HTT no.	MMTB class	No	Built	Car builder	Description	Seats	Truck	Control	Motors	Weight (tons)	Disposal
11-20	N	117-126	1916-17	Duncan & Fraser	Maximum Traction bogie, two-bogie drop-centre saloon cars	52			2 x 65hp GE 201G		1945-7
1-10, 33-39	M	107-116, 183-189	1916-18		single truck, drop end, open California combination cars,	36		various	2 x 50 hp		1928-30
21-24	O	127 - 130	1912		two-bogie trams open crossbench	54		WH T1F	2 x 50hp GE202		Sold 1926 to Adelaide
25-32	P	131-138	1916-17	Duncan & Fraser	Maximum Traction bogie, two-bogie drop-centre saloon cars,	52					1945-7

Table 7: Trams of the HTT

6.2.6 MBCTT trams

The MBTT commenced with 25 combination cars with long saloon, mounted on a Radiax (radial axle) T-class truck by J.G. Brill of Philadelphia, imported in complete knock-down condition. The tramway also operated 12 single truck California cars assembled by the Adelaide firm of Duncan & Fraser, with bodies designed by Struan Robertson. These were the first in Melbourne to be fitted with air brakes. Six cars were built by Duncan & Fraser with radial truck (Brill Radiax) long wheelbase in 1916 and another six cars of same design as the initial 12 cars, but with line breakers in place of circuit breakers, and torpedo type roof ventilators were added in 1918. S164/MBCTT-11, has been preserved by the Tramway Museum of Victoria, and is on loan to the Hawthorn Tram Depot. One operating T-class tram, No. 180, belongs to the Tramway Museum of Victoria, is on loan to the Hawthorn Tram Depot.

MBTT no.	MMTB class	No	Built	Car builder	Description	Seats	Truck	Control	Motors	Weight (tons)	Disposal
1-18	S	154-171	1916-17	Duncan and Fraser	single truck, drop end, open California combination cars,	36		various	2 x 50 hp		1928-30
19-25	T	177 - 182	1917	Duncan and Fraser		38 /110	Brill Radiax				1962

Table 8: Trams of the MBCTT

²¹⁷ 'Melbourne's Tram History <http://www.railpage.org.au/tram/c.html>

6.2.7 FNPTT Trams

The Footscray, Northcote and Preston Tramway Trust was not operational prior to the Takeover by the MMTB, and while trams were ordered for the line and completed in 1920, they did not have separate FNPTT designations. The MMTB designated the single-truck straight-sill, closed combination cars R class and were later all re-designated as G-class. Trams were numbered R 151-153, 172-176. They were withdrawn between 1929-36.

6.2.8 NMETL

The North Melbourne Electric Tramway and Lighting Co. operated two types of trams from 1906. At the time of the MMTB takeover, these were designated U (1 to 10) and V class (11 to 15). The U class was an enclosed saloon tram while the V was an open toastrack design. Both employed GEK10, GE K36J controllers and 2 x GE67 34 kW motors and were withdrawn from 1929, with the last out of service by 1944-45. One tram has been preserved, No. 214, at the Hawthorn Tram Depot.

6.2.9 MMTB

The MMTB initially took over the vehicles from the various trusts, but soon found a need for more trams, and initially ordered single-truck straight-sill closed combination cars (Q-class). (note codes were rationalised and trams re-classified in 1928). Two Birney Lightweight Safety Cars were imported from the USA in 1924, along with some experimental one-man operation saloon tourist cars of the Y-class. The Birney's were built by Brill and the St Louis Car Co. and were the last trams to be imported for the Melbourne system. They were single-bogie cars, the smallest of Melbourne's passenger trams, and intended for driver-only operation on lightly trafficked lines. Numbered 217 and 218 they were withdrawn in 1957. 217, belongs to the Tramway Museum of Victoria is on loan to the PTC historic fleet at the Hawthorn Tram Depot.

The X1 (Nos: 459 – 468) and X2 (Nos: 675 – 680) class series, were introduced in 1928-30 and were locally-built based on the Birney (X-class) design. Two doorways on each side were provided. They operated mainly on the Footscray system until it was closed in 1962, although some operated all over Melbourne in all-night service. The X2 class reverted to a single doorway on each side. X1 467, is at the Tramway Museum of Victoria X2 676, is at the Hawthorn Tram Depot and 680, at the Tramway Museum of Victoria.

The Q-class trams were built by the MMTB in 1922-23 to similar designs to existing PMTT trams, in order to quickly increase the number of electric trams in service. Q139, 199 and 197, are preserved, the last as scrubber car 9W at the Hawthorn Tram Depot .

The Y class appears to have been developed as a prototype driver-only tram, although it was probably not operated that way. It was followed by the Y1 of "Peter Witt" design which was fitted with a sloping windscreen to avoid the reflections of internal lighting getting in the driver's eyes. Larger wheels were introduced to improve the ride, and reduce noise. It is possible that this tram was intended to be the new standard design for Melbourne, but its potential for driver-only operation meant that union opposition was certain, so development of the W-series (with the W3) was continued instead.

Only one Y class was built in 1927 (No. 469), followed by four Y1 trams in 1930 (Nos: 610 – 613). The only Y-class and Y1. 613 are at the Hawthorn Tram Depot, while 610 is at Bendigo, 611 stored at the Preston Workshops and 612 is at TMSV Bylands.²¹⁸

6.2.10 W Class

Between 1923 and 1956 756 W-class trams were built in eight series to a variety of design variations, most of which were built at the MMTB's Preston workshops.

The origins of the W can be traced to a small batch of 21 trams built by Duncan & Fraser of Adelaide for the Prahran & Malvern Tramways Trust (P&MTT) in 1913-14. The early trams known as drop centre cars had a half open half saloon form, which allowed for faster loading, but gave some protection to passengers who might be more sensitive, or travelling further.²¹⁹

The style seemed most suited to the climate in California and Australia, although toast-rack styles with all the seats running across the tram and open sides, became common in Sydney. A new style of tram with an open centre section with lower floor for ease of egress, and an enclosed saloon at each end appears to have first evolved in Australia, with Melbourne, Brisbane and Adelaide all developing versions of the drop-centre bogie car during the 1920s, although trams made by Boon & Co of Christchurch in New Zealand also claim this title.²²⁰

Equipment in the surviving W Class trams still has an archaic appearance, with the electric control unit housed directly in front of the driver's knees, and direct coupled levers to operate both it and the brakes. Older style trams frequently use a simplified form of Westinghouse railway brake. The brake is applied by allowing compressed air to enter a large brake cylinder (or cylinders), which pressed brake shoes onto the wheels. A sanding system is used to improve traction in the west and especially during autumn leaf fall with a floor pedal operation. The brake system is operated by means of a valve. A foot pedal is used to operate the large bell, mounted directly under the cabin floor, so that the sound is best projected to the front. The crash worthiness of the front of the W class tram is an issue as the driver has to be placed close to the front for visibility, and the solid chassis rails offer no opportunities for crumple zones.

Modern trams now use electromagnets to force heavy blocks down onto the track and the latest designs use disc breaks. These were activated by means of a button or switch, or in some more recent systems by simply releasing the "dead man's handles" while the vehicle is moving. Modern trams also use stub axles rather than axles connecting both wheels to give low floor technology, while they vehicles are quite different technically with complex wiring, electronics and monitors, cameras and sonic bells.

Magnetic Brakes were fitted to the City Circle trams in 2001 and different air operated brake systems, in order to deal with over-run issues. With the progressive replacement of W class trams, selected examples have been retained as part of the 'ready reserve fleet', while some special examples have been placed in the heritage collection at Hawthorn Depot. The heritage fleet comprises 6 W class trams (W 380, W1 431, W2 325, W2 510, W5 774, W7 1040).

²¹⁸ Y1 Class, VicSig, <http://www.vicsig.net/index.php?page=trams&class=Y1>

²¹⁹ Matthew Churchward, W-Class Trams, <http://www.emelbourne.net.au/biogs/EM01571b.htm>

²²⁰ Australian Heritage commission, Linking a Nation, Chapter 6: Transport and Making Cities, 1850-70, <http://www.environment.gov.au/heritage/ahc/publications/commission/books/linking-a-nation/chapter-6.html#electric-tramcar>, also pers com Warren Doubleday; Tram and light-rail transit systems, Wikipedia, http://en.wikipedia.org/wiki/Tram_and_light-rail_transit_systems

With the progressive replacement of the W class trams, selected examples have been retained in the heritage fleet and conserved at the Hawthorn Depot., or in the ready reserve fleet for possible emergency use. The gutted 'Henderson Springs' trams are possibly the more exceptional of the remaining mothballed trams, that might be further interest for technical and historical value.²²¹

6.2.11 Prototypes (PCC980 and 1041)

Almost continuous development and refinement of the W Class was undertaken up to the 1950s. However, a period of stagnation then ensued that meant little new design was initiated.

In 1938 the MMTB obtained the Australian licence to import PCC patented technology and proposed to import a PCC tramcar for evaluation in Melbourne as part of its plans to modernise. PCC stands for Presidents Conference Committee, a design committee formed from the 1929 'Electric Railway Presidents' Conference Committee' as an attempt to fend off competition from busses and automobiles, with a standardised tramcar design. This would employ most efficient and comfortable design providing smooth acceleration and braking, rubber mountings and springs and hypoid gears to minimise noise, vibration and rattle, and enclosed saloons with good heating and ventilation.

In 1949 PCC trucks and control equipment were imported, instead of a complete PCC due to import restriction and a hybrid car was produced with a locally made, modified SW6 body mounted on St Louis B3 trucks powered by General Electric controls. The floor in the drop-centre section of the tram had to be raised to fit the PCC equipment. The full acceleration and deceleration capabilities of the equipment were disabled, as they were considered a hazard on a system where no other tram possessed them. So the tram had neither the styling nor the performance of the American PCCs.²²²

This was to be the prototype for tramcars built for the conversion of Bourke Street bus routes to electric tram routes, but this did not eventuate due to financial constraints. However, because the government of the day prevented the board from obtaining any new trams no further PCC trams were built –although standard Ws continued to be built up to 1956 when the last, W7-1040, entered service. The only example PCC980 was withdrawn from service in 1971.

The equipment from 980 was later removed for a new project - the Z class prototype. In 1973, after a change in the political climate, a new prototype tram was built, 1041, based on the Gothenburg M28 class. However it used the trucks from 980, plus modernised PCC control gear from ACEC in Belgium, and was classed as a PCC-1041. This was the basis for the Z class trams that began appearing in 1975, though these had Swedish trucks and control gear as with the Gothenburg trams, in a body updated from that of 1041.

6.2.12 Z Class

The Z Class tram was the first new tram model since the W class, and the first new trams to be built for over 20 years, when they were introduced in the 1970s. Initially a prototype (PCC 1041) was designed and built at the Preston Workshops, employing all steel bodies and other features adapted from European (Swedish) sources. The Z-class trams, built by Comeng, starting with the Z1 class, built from 1975 to 1979. 100 trams were built, most of which are were to be withdrawn

²²¹ Robert Green percs con, May 2011.

²²² *Trams Down Under* internet message board <http://tdu.to/94420.msg> accessed 1/7/2011.; David Hoadley June 1995. Updated 8-Jan-1996 *Trams of Australia* <http://www.railpage.org.au/tram/z.html> accessed 1/7/2011

after the 2006 Commonwealth games, but increasing demand meant that even Z1 and Z101 of the heritage fleet went back into service. The very similar Z2-class followed in 1978 and from 1979 to 1984, 115 Z3-class trams were introduced, being a significant improvement with an additional door each side and much smoother acceleration and braking. A feature of the Z class was the seating position of the conductor, which anticipated the eventual removal of conductors..

6.2.13 A Class

The A-class was introduced in 1984 with a similar general form to the Z but with wider cabins also built by Comeng. They did away with the concept of a seated conductor. 70 were built and are still in service today. Like the Z-class, the A1 trams were originally fitted with trolley poles, however they were subsequently removed and replaced with pantographs from 1988. All subsequent trams were fitted with pantographs, and the remaining W Class trams were also converted, and with the use of pantographs, the overhead wiring was changed so that trolley poles could no longer operate on many lines.

6.2.14 B Class


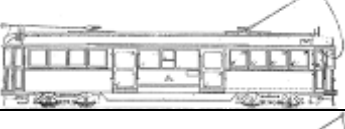

A larger articulated version of the A class was also introduced in 1984. They originally had dual level steps for light rail operation at Railway height platforms on the converted Port Melbourne and St Kilda Lines which were later removed. The first two B1 class trams, 2001 and 2002 were built as prototypes for the very large fleet of B2 class trams, 130 cars the largest single class of tram other than the W2. The B2 did not have the dual level steps

6.2.15 C Class

The Citadis trams are three section articulated vehicles, manufactured in France by Alstom and introduced following privatisation of Melbourne's tram system. Thirty-six are in service. The five C2-class trams are another low floor tram with 5 sections, introduced in 2008 after being leased from Mulhouse in France. They have been dubbed 'Bumblebees' due to their distinctive yellow colour, and exclusively run on route 96. These have now been purchased by the state, becoming the C2's

6.2.16 D Class

The now defunct M>Tram purchased the German made Siemens Combino which have now reverted to Yarra Trams. The Combino is a three-section (D1-class) or five-section (D2-class) articulated vehicle.

W6-7	
SW5	
Z1-2	

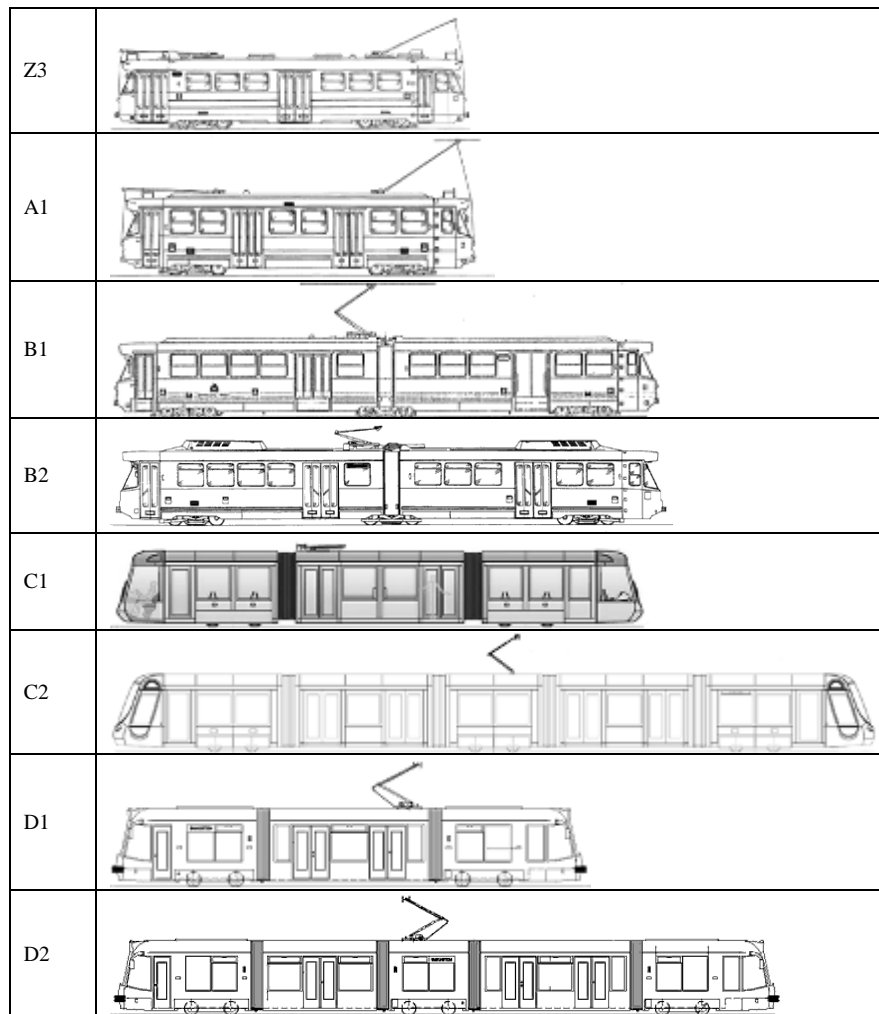


Figure 101: Profiles of trams in current operational fleet (Makers drawings from <http://www.vicsig.net/index.php?page=trams§ion=rollingstock>)

6.3 Civil works Power Supply, overhead, switching

In general, the major engineering works related to the tramways are the tracks set in the roadway and the power cables suspended above them, along with the power generation systems. With the cable trams a central power house and cables under the road were the visible (and audible) elements, while with electric tramways tended to hide the evidence of power generation but created a spider-web of wires overhead, which transformed the streetscape.

6.3.1 Cable tram engine houses and cable runs

Cable trams required tunnels between the tracks in both directions to house cables running under the roadway four feet (1.2m) deep. Steam engines powered continuous ropes as the wire cables were called, up to 24,870ft (7,580m). The cables consisted of six strands of seven steel wires with a hemp core. Threading of the cable called on the resources of an army of men and a team of horses, while to drag it up to Jolimont Hill in East Melbourne the number of horses had to be increased to 25. This was for the first time installation of the cable, after that it was pulled through by the old cable and then respliced.

Engine houses tended to be quite elaborate buildings located on prominent corners or street frontages, due to the need for central location on the cable runs. Considerable underfloor space was required for the drive pullies, while attached boiler houses and chimneys made them strong landmarks.

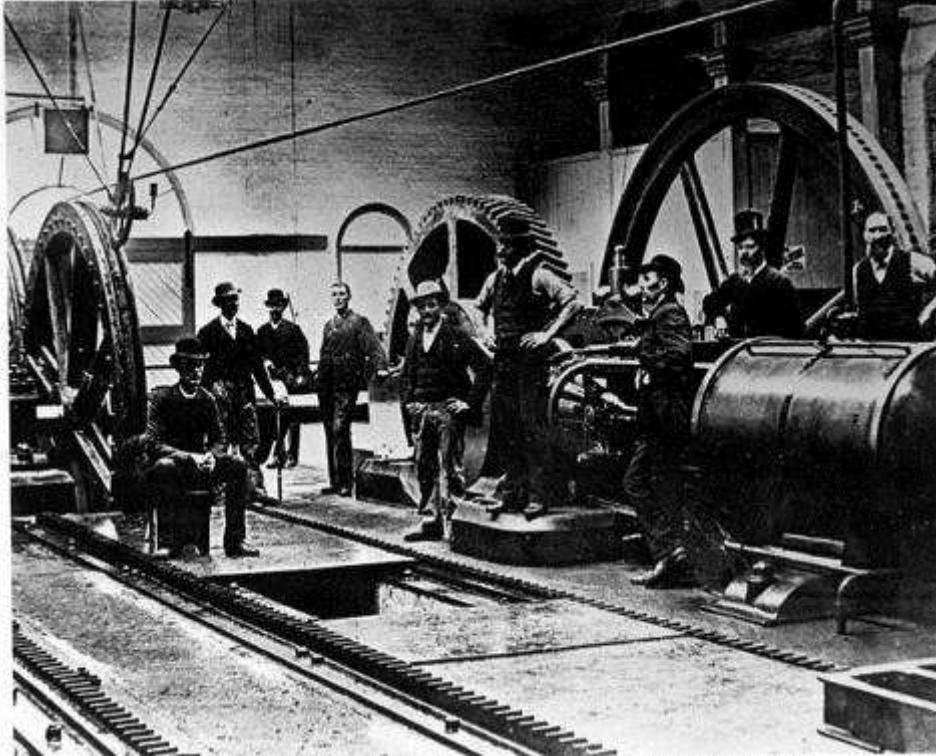


Figure 102: Interior of Richmond Cable Tram Engine House c1888 (image Picture Victoria)

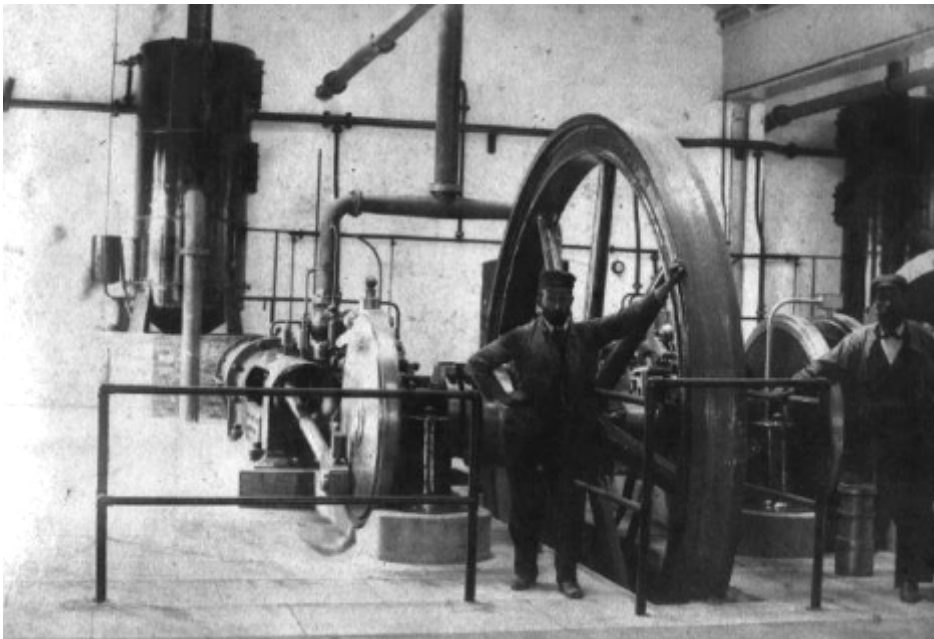


Figure 103: Fredrick S. Smith in either the Gertrude Street or St Kilda Road engine house of the Melbourne Tram and Omnibus Company

Car Barns or car sheds were generally near the outer ends of the routes, so that cars could be wheeled out for the morning rush and put away after the last evening home run. They were mostly timber and corrugated iron construction with track runs and in some cases turntables and traversers. Northcote was unusual in having the shed and engine house part of the same structure.

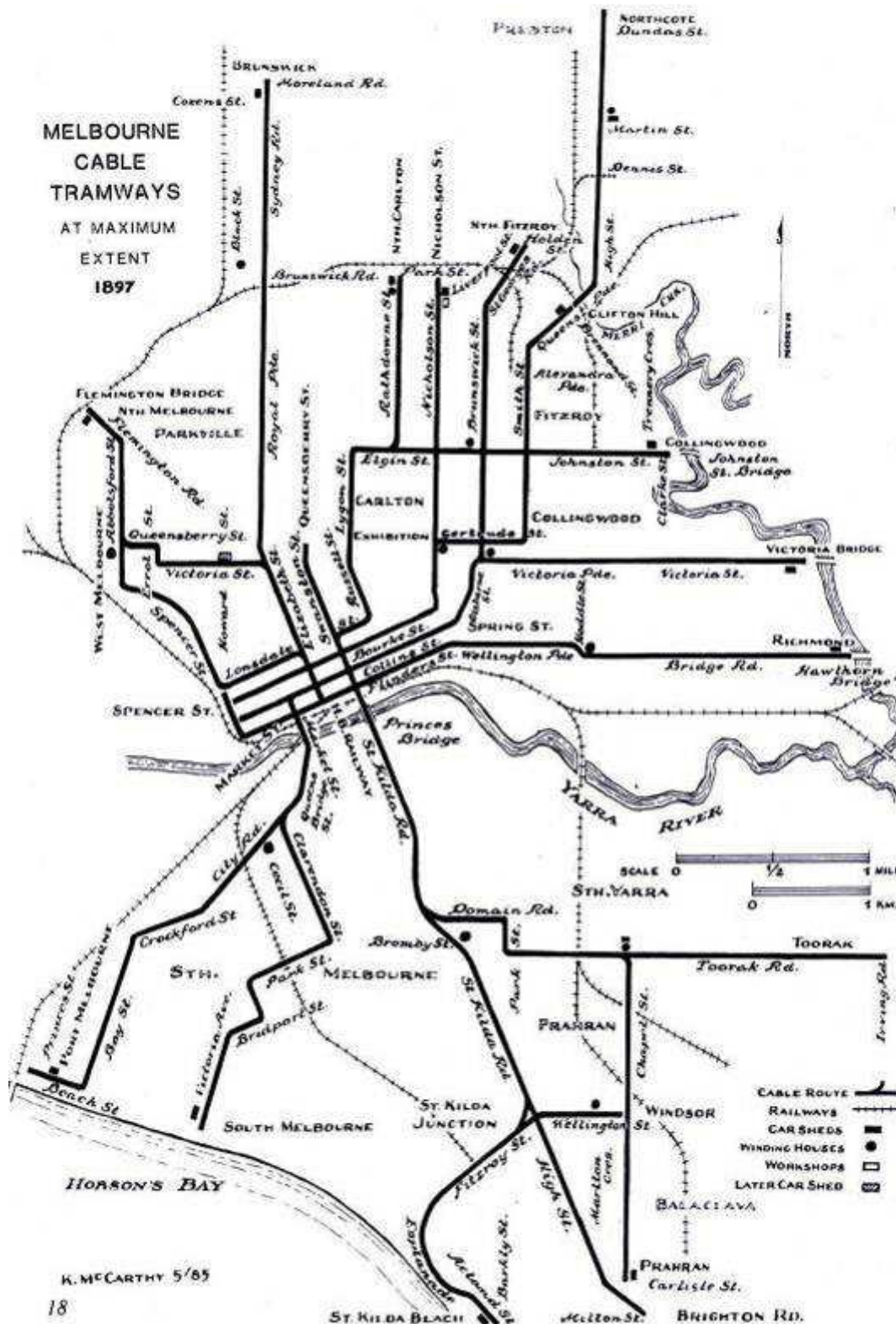


Figure 104: Cable Tram system at greatest extent from about 1891. (McCarty 1984 p.18)

6.3.2 Overhead wires

The early tramways tended to use centre rod cantilevered pole supports for the overhead, but as road traffic increased, these became an obstacle and were replaced by wires suspended from poles along the sides of the road, with the only surviving centre road poles being in reserved track on Victoria Parade, Royal Parade, Peel Street, Dandenong Road, Fitzroy Street and St Kilda Road.. Many tramways erected their own poles, rather than employ existing electricity supply, both because they required a different voltage supply, and spacings needed to be closer, regular and on both sides of the road.

A range of pole types were used, both cast iron and timber. Also several forms of attachments, insulators and finials. In some cases the poles were quite decorative, with moulded ferrules cast around the poles at various heights, ogee and conical shaped finials, and curlicue brackets. The original poles survive in many cases, particularly where metal poles were installed.



Figure 105: Decorative tram poles in Fitzroy St. (<http://clubtrotppo.com.au/2008/02/16/liveability/>)



Figure 106: Overhead wires at Grand Union Junction, Balaclava after it was rewired to get rid of frog pans.



Figure 107: characteristic early tram pole final..

6.3.3 Trackwork and points

A small section of cable tram track, along with the cable tunnel used to survive at the western end of Bourke Street, but was removed for changes of tram tracks about 12 years ago. More recently an extensive section of cable tram track was discovered buried in the road reserve at Queensbury St North Melbourne. Other sections are likely to survive where electric tram routes did not follow the cable routes, such as Rathdowne Street North Carlton and possibly some of the auxiliary cable tunnels such as the Fitzroy Street - St Kilda Road corner. The tunnel at Gisborne St and Victoria Parade is believed to remain in situ and in used for tramway power cables.²²³

²²³ Pers com. Warren Doubleday May 2011.

Trackwork is generally renewed between every 20 and 40 years, so very little is of any special age, although the unusual configuration, such as the Grand Union Junction at Balaclava, and remnants of former sidings, turn-outs and disused lines can still be round embedded in roadways.

The cast iron cover plates for drains, point levers and electrical supply can still be found with MMTB and in some cases other trust names.



Figure 108: Tram track crossover fabricated at Chas Ruwolt Pty Ltd, Richmond, Museum Victoria image MM 011937

6.3.4 Bridges Cuttings and embankments

Few dedicated tramway civil engineering structures were required on the system as in most cases the tramways employed the existing roadways. However, a number of reserved tracks – running through wide road medians, or in completely separate strips of land, and a few tram only bridges and other structures were created for the system.



Figure 109: Miller Street tram bridge over railway near Preston Depot. Darebin Historical Encyclopedia

Reservations with train like ballasted track can be found through Royal Park (which also has a dedicated rail over tram bridge), and along Wests Road and Raleigh Road Maribyrnong. The Miller Street tram over rail bridge was required to link the east and west Preston sections of the St Georges Road tramline, and later for access to the Preston Workshops, It's steep and narrow structure without a paved roadway make it a distinctive structure, which featured in the film Malcolm.



Figure 110: Mock-up tram crossing Miller St Bridge in the Film 'Malcolm'²²⁴

At least one tunnel can be associated with trams, although it was originally constructed by the Melbourne Brighton Railway to connect Brighton Beach Station to the beach and jetty (with a trolley running on narrow gauge rail track. A tram waiting shed was erected over the north side of the tunnel for the VR tram connection.²²⁵

The separate Maribyrnong Road tramway bridge was an unusual structure which crossed the river on the straight, while the older Monash concrete road bridge was built to one side, necessitating a divergence for traffic crossing the path of the tram, and signs warning cars not to follow the tram on the open deck timber trestle tram bridge.

²²⁴ <http://nla.gov.au/nla.pic-vn3564272-v>

²²⁵ *The Argus* Thursday 20 September 1934



Figure 111: Old Maribyrnong river Tram Bridge (photo Warren Doubleday).



*Figure 112: Waiting shed on left of VR tram 33. Brighton Beach,
<http://www.victorianrailways.net/photogallery/suburb/gal04/bbeachtram.html>*

6.3.5 Passenger Shelters and Safety Zones

Early tram stops relied on pedestrian priority on roads, and the relatively light traffic with passengers able to wait on the footpath or road as they preferred. However as motor, tram and pedestrian traffic increases, conflicts eventuated.

Shelters were provided on roadsides and sometimes medians in locations where particularly large numbers of passengers alighted (but generally not in the central city). Three shelters erected by the P&MTT in about 1916-7 survive on Balaclava and Orrong Rds, Malvern Rd

Armidale, and Cotham Rd Kew, with a forth from the short period of the Tramways Board in MacArthur St East Melbourne. This is one of a few locations where the short-lived Tramway Board logo 'TB' can be seen. Four interwar shelters from the MMTB period remain in St. Kilda Road and a substantial shelter at St Vincent's Plaza was relocated and reconstructed on the opposite side (south) of the tracks in recent years. As new standard design pressed steel shelter design was introduced during World War Two.²²⁶ The Domain Interchange was initially a busy centre road reserve stop, and in the 1970s provided with a substantial canopy.

Tram safety zones and platforms form a critical part of the streetscape in Victoria and the current yellow-prow safety barrier is the culmination of a progressive development of street furniture and protective measures. Safety Zones were designed in response to increasing road traffic and the danger of pedestrians being run down. The safety issue was a prominent public concern at least by the 1920s, when street safety zones were advocated by the Kew Town Council for the Victoria Bridge "death trap" at the interchange between the electric and cable trams.²²⁷ The MMTB therefore formed a rectangle of white bricks to delineate the safety zone.²²⁸

A similar proposal was put forward for painted lines to delineate safe crossing points at intersections in the city, particularly to allow pedestrians to move between the Flinders Street Station entrances and tram stops in Elizabeth and Swanston Streets. This was soon followed by similarly marked and signposted safety zones the Queen Victoria Market in Elizabeth St, and at the Flinders St terminus of the Richmond Cable Trams.²²⁹ These were established as an experiment and by October 17 further safety zones were proposed for most of the centre city street crossings.²³⁰

²²⁶ Ken Duxbury, *Making Melbourne's Tramways: Continuity and Change* 1999, copy supplied by Robert Green

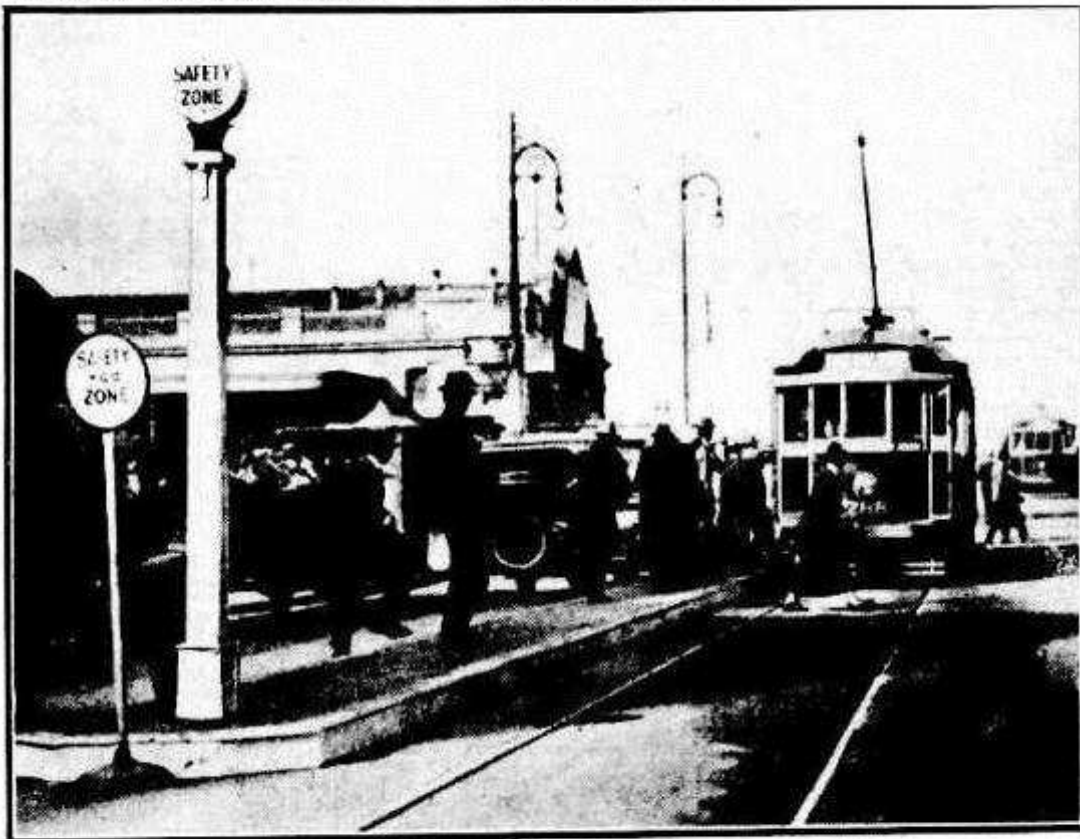
²²⁷ *The Argus* Saturday 27 Nov. 1920 p 17

²²⁸ *The Argus* Saturday 22 Jan 1921 p.16

²²⁹ *The Argus* Saturday 4 June 1921 p.20; Thursday 2 March 1922 p.8.

²³⁰ *The Argus* Saturday 7 October 1922 p.27

RAISED SAFETY ZONE IN SWANSTON STREET.



As an experiment the City Council has erected a platform over the safety zone opposite St. Paul's Cathedral in Swanston street. The platform is intended to prevent vehicles from encroaching on the safety zone.

Figure 113: Swanston Street safety zone (the Argus 3 June 1926 p.9)

By 1925, safety zones were well established and many were marked with signs and more solid posts. Some more substantial safety zones were also created by constructing raised islands, such as in St Kilda Rd near Fitzroy St. Raised platforms in the city were first proposed in 1926²³¹ and an experimental platform was installed in Swanston St outside St Pauls Cathedral with solid concrete posts. However, the platforms were considered to be an obstruction to motor traffic by some and there was an almost immediate call for them to be removed. Various other designs were experimented with, including sign and lamp posts intended to withstand impact from cars.

²³¹ The Argus Friday 7 May 1926 p.17; 3 June 1926 p.9



Figure 114: *The Argus* Sat 7 July 1928 p.23; 31 July 1929 p.5

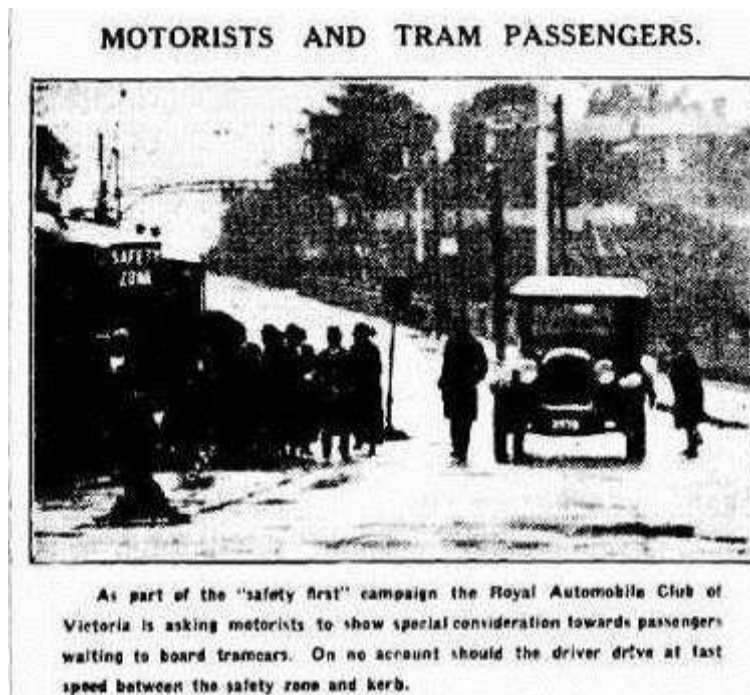


Figure 115: *The Argus* 4/3/1925 p.19, showing tram safety zone.



Figure 116: Raised platform and ubiquitous curve ended steel pipe hand rails in 1960s.

The long concrete “prow” type of Safety Zone, (in conjunction with galvanised iron pipe rails fabricated in separate ‘loop’ sections), was first introduced about 1961, evidently in response to the increased risk to waiting passengers, and as a means of reducing interruptions to traffic, as passengers alight.²³²



Figure 117: Current form of yellow-painted concrete ‘prow’ safety zone protection, and

²³² MMTB Annual Report, 1961

In the 1980s several large steel shelters were constructed within widened safety zones at Museum Station in Swanston Street as well as 35 smaller modular shelters. A special shelter and platform with a centre-island taking up most of the roadway in Elizabeth Street was constructed at the terminus opposite Flinders Street Station, initially a small structure, but then replaced in the 1980s with a large architectural piece intended to blend with the station, and most recently the Robert Risson Tram stop.²³³

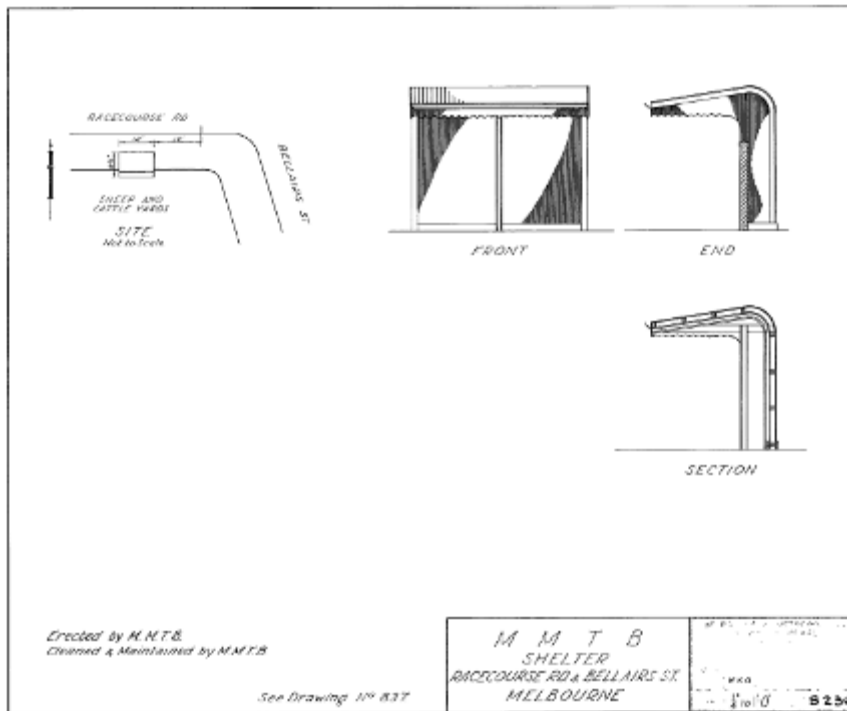


Figure 118: Standard pattern MMTB waiting shelter

With the termination of many tram routes at the top of Swanston Street, and soon after the electrification of the Swanston Street and St Kilda Road cable tramways, a dedicated signal box was constructed in 1928, combining a waiting shelter and conveniences. It was controlled the shunting and dispatch of the increasing volume of electric trams arriving from the southern suburbs.

²³³ MMTB Annual Report 1982 p.13; 1984 p.5



Figure 119: Swanston St Signal box and shelter.

One of the greatest changes to tram stops has been the advent of raised platforms and protected areas associated with level loading on low floor trams. The initial impetus for this may have been the conversion of the Port Melbourne and St. Kilda lines to light rail, with the construction of dedicated lower platforms either replacing the originals, or added to the end of existing platforms. This led to the Superstop platforms with raised platforms in the roadway, somewhat wider than the former safety zones, having protective railings and shelters, as well as electronic route displays. The first of the Superstops, the Collins Street/Town Hall site, won the John Truscott Design Foundation award.

The St Vincent's Plaza interchange is within the centre road reserve on Victoria Parade Fitzroy, and provides for interchange of trams heading up Brunswick Street and east along Victoria Street. Initially provided with a 'chalet' form of open sided timber shelter on brick half walls, the interchange was redeveloped in 2002 with a third track for shunting and bypass. The shelter was moved from the north to the south side of the tracks and restored at the time with the brickwork replaced.²³⁴

The Elizabeth Street Terminus recently given the name "Robert Risson Tram Terminus" has been the terminus of the Sydney Road routes from the cable days. It has had a number of make-overs with some large arch roofed shelters in the 1980s, and the more modest, but still substantial steel and glass cantilevered roof today.

²³⁴ Lovell Chen, Yarra Connections, Nov 2002, Yarra Trams Newsletter.



Figure 120: Elizabeth Street in c1900 (SLB H3171) and in 2009 (southernthunderer.com.au)

In April 1991, the Swanston St Terminus in Victoria Street (where trams would turn for shunting) was closed following the death of a passenger in 1989 and a further accident in early 1991.²³⁵

The Melbourne University tram terminus was developed in about 2000, to provide for the busy student traffic, and also for terminating services to the south of the city. It has become the fourth busiest on the system, and included the first island platform tram stop.



Figure 121: Artists impression of proposed Melbourne Uni terminus
http://www.yarratrams.com.au/desktopdefault.aspx/tabid-105/99_read-350/

²³⁵ Trolley Wire November 1991. p.7.

6.3.6 Substations

The expansion of the electric tram network under the MMTB created a need for greater capacity and control of the electricity distribution system. This led to a series of new substations and refitting of existing substations. As technology improved and various installations degraded, a variety of new installations were also carried out which upgraded some equipment.

All tramways utilised direct current (DC), and originally power stations generated DC current and sold DC current to users. However, alternate current (AC) technology was better for generation and transmission and so was converted back to DC at the tramway substations. (However modern DC transmission at very high voltages is used these days). Electricity supply was purchased from the railway supply (Newport Power Station) and later SEC generators, and transmitted via the power existing grid. The exception was the North Melbourne and Essendon Tramway which had its own steam powered generators as it also provided a domestic electric supply.

The earliest systems used rotary converters which employed a mechanical system, using an electric motor to drive a generator. The initial installations by the tramway trusts were generally co-located with the tram depots. For example Malvern, Kew, Elsternwick, Hawthorn and Coburg had rotary converters. Second hand rotary converters were installed at Preston and Brunswick substations but have been removed.

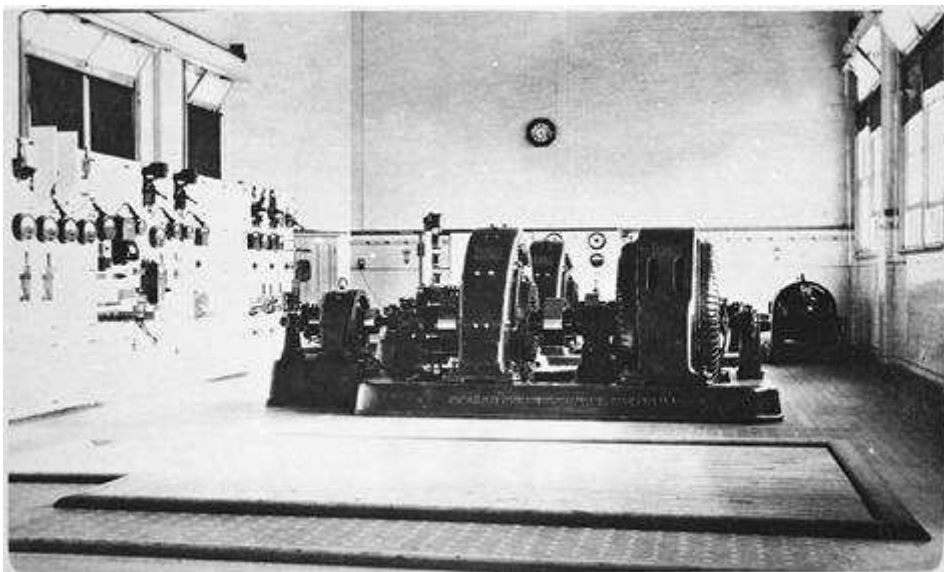


Figure 122: Rotary Converter at Hawthorn Tram Depot (Museum Victoria Reg. No: MM 004054)

In the 1930s, despite the depression, new technology was introduced with mercury arc converters, which employed a process involving ionising mercury vapour. These were smaller and were initially housed in glass bulb, and later a steel tank. The mercury arc rectifier was invented by Peter Cooper Hewitt in 1902 and further developed throughout the 1920s and 1930s by researchers in both Europe and North America.²³⁶

²³⁶ Baker, Ray Stannard (June 1903). "Peter Cooper Hewitt - Inventor; Three Great Achievements In Electrical Science". McClure's Magazine XXI: 172–178. <http://books.google.com/?id=ZbYbHQiLTRYC&pg=RA1-PA172>.



Figure 123: Mercury Arch rectifier in Preston Substation (photo Robert Green)

ELECTRICAL SUBSTATIONS – DECEMBER 1984											
Substation	Code	Capacity (KW)	Make	Type of Converter	Year	Substation	Code	Capacity (KW)	Make	Type of Converter	Year
Ascot Vale	A	2-500	E.E.	Rotary	1924	Kew	Q	1-1,000	E.E.	Rotary	1928
Brunswick Road	B	1-500	E.E.	Rotary	1924	St. Kilda	SI	2-1,000	E.E.	Rotary	1930
		1-1,000	T.B.	S-Diode Rectifier	1983	Malvern	M	2-1,000	E.E.	Rotary	1930
Burwood	Bd	2-1,000	T.B.	S-Diode Rectifier	1978	Maribyrnong	Mg	1-600	BTH	Rectifier	1943
Camdenwell	Cw	1-500	E.E.	Rotary	1924			1-555	BGE	Rectifier	1959
		2-500	E.E.	Rotary	1925	Northcote	N	1-600	BGE	Rectifier	1953
Carlton	C	3-1,000	BTH	Rotary	1926			1-600	BGE	Rectifier	1956
Clifton Hill	Ch	1-600	BGE	Rectifier	1955	Preston	P	1-500	Hewlett	Rectifier	1930
Coburg	Co	2-600	BGE	Rectifier	1957			1-600	BGE	Rectifier	1938
Crombie Lane	Cl	2-1,000	GEC	S-Diode Rectifier	1975	Richmond	R	2-1,000	BTH	Rotary	1927
Deepdene	D	1-500	Hewlett	Rectifier	1934	St. Kilda	SI	2-1,000	Orlikon	S-Diode Rectifier	1966
		1-600	BTH	Rectifier	1945	South Melbourne	S	1-1,000	T.B.	S-Diode Rectifier	1982
East Kew	K	1-600	BGE	Rectifier	1953			1-1,000	T.B.	S-Diode Rectifier	1983
Elsternwick	E	2-1,000	Orlikon	S-Diode Rectifier	1967	S. M. Kingsway	Sw	1-1,000	T.B.	S-Diode Rectifier	1960
Essendon	Es	1-600	BTH	Rectifier	1943	South Yarra	Sy	1-600	BTH	Rectifier	1945
Fitzroy	F	1-1,000	BGE	Rectifier	1956	West Brunswick	W	1-600	Hewlett	Rectifier	1936
Glenhuntly	G	1-500	E.E.	Rotary	1924	Young Street	Y	2-1,000	E.E.	Rotary	1930
		1-600	BTH	Rectifier	1949	Mobile	-	1-600	BGE	Rectifier	1946
Hawthorn	H	1-1,000	T.B.	S-Diode Rectifier	1981						
Holden Street	O	1-555	BGE	Rectifier	1947						
		1-555	BGE	Rectifier	1948						

Figure 124: List of substations in use 1984 (copy provided by Robert Green)

The first example of this technology was installed in Holden Street, and later moved to Preston. Further installations were made during WWII with the Maribyrnong substation, and then the Mercury Arch rectifier at East Kew. From the 1960s the system progressed to solid state silicone diode rectifiers.

Silicon diodes are now used with very extensive use of electronics to control switching and require much less space. Melbourne had to reequip its sub-stations in the 1990's due to the higher current needed for air conditioned trams.

Robert Green listed the extant rotary converter installations in Melbourne tramway sub stations – 2003, which included the following:

- Ascot Vale sub station (1924) Decommissioned 2 No. 500kw rotary converters –
- Brunswick Road sub station (established 1925 in part of old Brunswick cable tram engine house) 1 No. 500kw rotary converter
- Glenhuntly sub station (established 1925 as part of Glenhuntly depot) 1 No. 500kw rotary converter

- Malvern sub station (established 1930 as part of Malvern depot) Decommissioned late 1990s 2 No. 1,000kw rotary converters
- Second hand RC installed at Preston and Brunswick, but now renewed

With the establishment of the M&MBW, rationalising included the provision of new substations for the converted cable lines and new routes, and to systematise the distribution of power from the SEC Latrobe Valley generation with 12 new substations. In some cases the cable tram tunnels were reused for power cables. The South Yarra substation in Daly Street was one of the first projects carried out under the direction of MMTB architect, A.G. Monsborough.²³⁷

The Clifton Hill cable depot also had a new substation installed next to the former Tramway board office.

In order to reduce supervisory manpower requirements, the MMTB constructed remote control gear of its own design for its electrical substations, and achieved a capability such that almost 100% of substation components could be built in-house. The main central control room was erected in Bouverie and Queensberry Streets Carlton, which was able to operate all the substations remotely. This provided a more reliable system and saved manpower. A secondary control room established for use in the event of damage from enemy air attack during the Second World War.



Figure 125: Carlton substation on Bouverie and Queensberry Streets

²³⁷ Bryce Raworth Pty Ltd, undated report, '2 Daly Street, South Yarra'

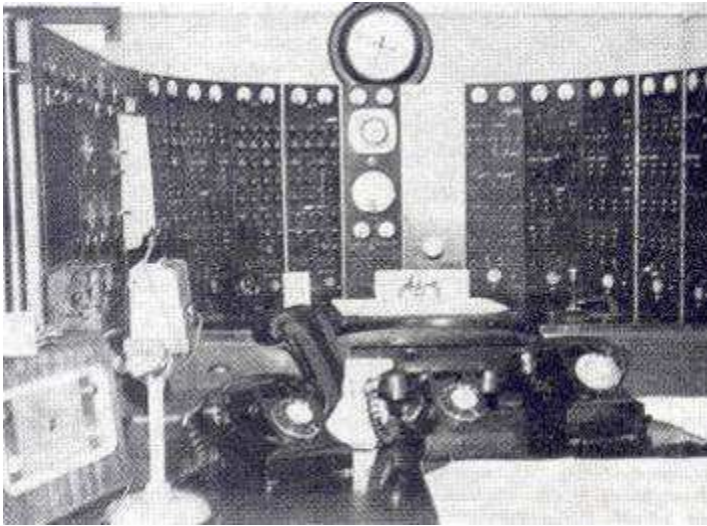


Figure 126: Carlton, Central Control room 1930s

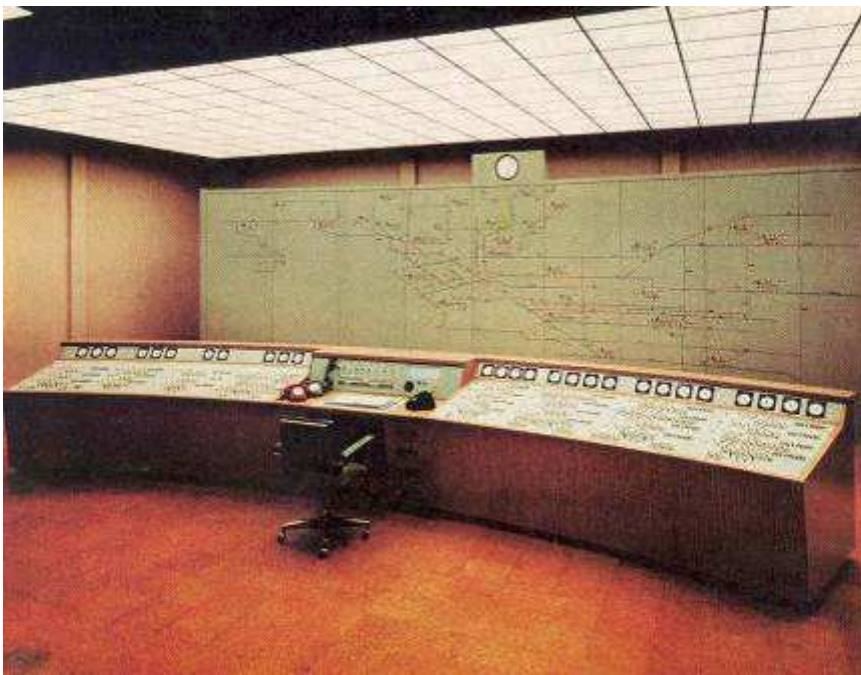


Figure 127: Carlton Central Control room MMTB News 1.4. Nov-Dec 1964

6.3.7 Overhead, timing and communication

Overhead wiring, are generally disregarded by most tram travellers (until that is, when the tram pole came unstuck and caused damaged, bringing the system to a halt). However, in many instances the overhead creates a very emblematic visual presence for the tramways, particularly where complex crossovers and turns require extensive wiring with the association stays, insulators brackets and cut off signs. The overhead depot was established in the former East Coburg tram depot in about 1965.

The term "Tramway Square" relates to the section of the overhead wiring of electric trams and trains at level crossings where the insulated section in the "square" can be switched to RAIL or TRAM power as needed. The tram square itself is a bit of circuitry that allows the electrified train wires (1500v DC) to change to become tram wires (600v DC). This is because the wires cross, and so they can only be one or the other. The crossing at Kooyong retained a signal and box and derailing catch points were installed in case of a failure as a tram descended the hill towards the railway. All the crossings had catchpoints originally with about 10 such crossings existing at any one time.

Switch gear for tramway overhead has been housed in cast iron cabinets from the MMTB period an earlier. These are generally positioned on the kerb near corners and are painted in the distinctive tramways green.



Figure 129: MMTB electric control cabinets on Lonsdale Street



Figure 130: Preston and Malvern Tramway Trust electric control cabinets at Malvern tram museum – noet similarity to MMTB style.

In an endeavour to improve punctuality of trams and to gauge how the service kept to timetables, the tramways introduced time recorders at critical points along routes. The P&MTT installed a Bundy Clock at Kooyong Road which was probably the first in Melbourne.²³⁸

Two types of Bundy clocks were used by the MMTB: Computing Tabulating Recording Company, and Cincinnati Time Recorder Company of Cincinnati Ohio, USA, mounted in the same type of protective metal case, painted standard MMTB tramway green.

Tram drivers were issued with a Bundy key embossed with the depot letter and the run number for each shift. At each timing point, the driver would have to insert and turn the key to make an impression on paper tape which then printed both the time and the run number on the tape.²³⁹

At least one Bundy clock is still in place (At the Domain Interchange) although with automatic vehicle monitoring transponders linked electronically back to central control centres they are no longer needed. A Bundy clock was restored in 2006 and placed in the Essendon Depot office to commemorate one hundred years of electric trams in Melbourne.

²³⁸ H S Dix Engineer and Manager, P&MTT Quarterly Report to 30/6/11, & 1/7/11.

²³⁹ Russell Jones 2007, Keeping time: Bundy clocks in the MMTB, Friends of Hawthorn Tram Depot, <http://www.hawthorntramdepot.org.au/papers/keepingtime.htm>



Figure 131: Bundy Clock in South Melbourne? (Source State Library Victoria) and example at Malvern tram museum.



Figure 132: Clock at former terminus

6.4 Administration

The management, administration and supervision of the tramways required its own office accommodation, which parallels the development and changes in the tramway systems. The MT&OC constructed a new and elaborate building in 1891 at 673 Bourke Street, as their new office at one of the two city cable tram termini. It was designed by architects Twentyman and Askew in a Gothic Revival style similar to the more elaborate Olderfleet-Rialto row in Collins Street. Coincidentally, a small portion of the cable tram track remained buried in the asphalt outside in Bourke Street for decades after the system was scrapped, but was removed when the city circle tram route was created and the Bourke Street tram line joined Spencer Street for the first time.



Figure 133: Melbourne Tramway And Omnibus Co Office 669 Bourke St (Photo National Trust Vic)

With the establishment of the MMTB, the cable tram company offices were taken over, as were the various electric tramway trust offices at each depot. However, accommodation was not sufficient and new larger dedicated administrative offices were required. In 1937, a new headquarters building was erected in Little Collins Street to house the M&MBT centralising management, administrative and design functions. This was initially an adjunct to the existing offices at which the Board took over from the MT&OC.



Figure 134 MMTB Traffic Office on Victoria Parade.

In 1934 offices were also built at 93-103 Victoria Parade for the Board's 'Traffic Office' as part of the expansion and redistribution of various administrative functions.²⁴⁰



Figure 135: MMTB Head Office, 616 Little Collins Street, 1937. (MMTB photograph State Library & Google Street view)

All these buildings survive although they are no longer in public ownership.

²⁴⁰ Fitzroy City of Yarra Review of Heritage Precincts 2007

6.5 Workshops and repair

Tram Workshops were located on Holden Street at the corner of St. Georges Road Fitzroy, only the Substation remains as the site was demolished and sold 1937.²⁴¹

In the mid 1920s, the Board sought suitable space for constructing its own tramcars. Steel chassis and truck frames had already been manufactured at the Cable Repair Workshops at Nicholson Street North Fitzroy, wooden bodywork being done in temporary sheds behind the Fitzroy cable car shed, painting and varnishing was carried- out at Preston and Glenhuntly Depots, and tenders let to private firms for completed bodies, while on the running maintenance and overhaul was conducted at workshops attached to the Malvern, Hawthorn, Coburg and Essendon Depots.



Figure 136: cable trams in temporary storage at Nicholson Street Depot during conversion of tramlines to electricity Holden Street workshops c1940 (running Journal)

The Board considered that a single good workshop was desperately needed, and so a site was selected covering 17 acres at Preston opposite the Preston Depot. Tenders were let progressively for each building with the Paint and Car Erecting Shops completed early in 1925, together with their traverser. The main Store and Sub-station were erected in 1925-26, with the large building to house the Truck, wheel, Machine, Fitting and Electrical Shops, together with Traverser to the Car Shop, following during the third. quarter of 1926. Timber storage racks, Office block, Blacksmiths and Plate Shops, Foundry and Pattern Shop, were finished in the next few months, and finally the Mess Hall and its amenities. Preston became the most modern tramway workshop in Australia and absorbed the maintenance, overhaul and. new construction tasks for the whole system, the latter immediately consisting of W class cars for the cable conversions, and subsequently W1 and W2 types.²⁴² One of the wheel lathes from the Preston workshops was later transferred to the St Kilda Tramway Museum, in Adelaide where it was kept in operation.²⁴³

The Workshops also became a distinctive cultural element of the system, developing a workplace culture and standard of workmanship which gave the W class trams a special feel.

²⁴¹ The Argus Monday 20 December 1937 p.2

²⁴² K S. Kings '50 years of the M.&M.T.B', *Running Journal*, Vol 6 No 3 Dec 1969.

²⁴³ Pers. Com, Warren Doubleday, June 2011.

Aspects of this culture are evident in the oral traditions and characters of the workshops, such as Norm Cross, who may have been the inspiration for Malcolm in the film of the same name by Nadia Tass.²⁴⁴ The Tudor style “Melbourne Room” which provided a ball-room, theatre, concert and lecture hall for tram events, still features the gaily decorated stage that hosted 3DBs *Lunchtime Funtime* with Bill Collins.

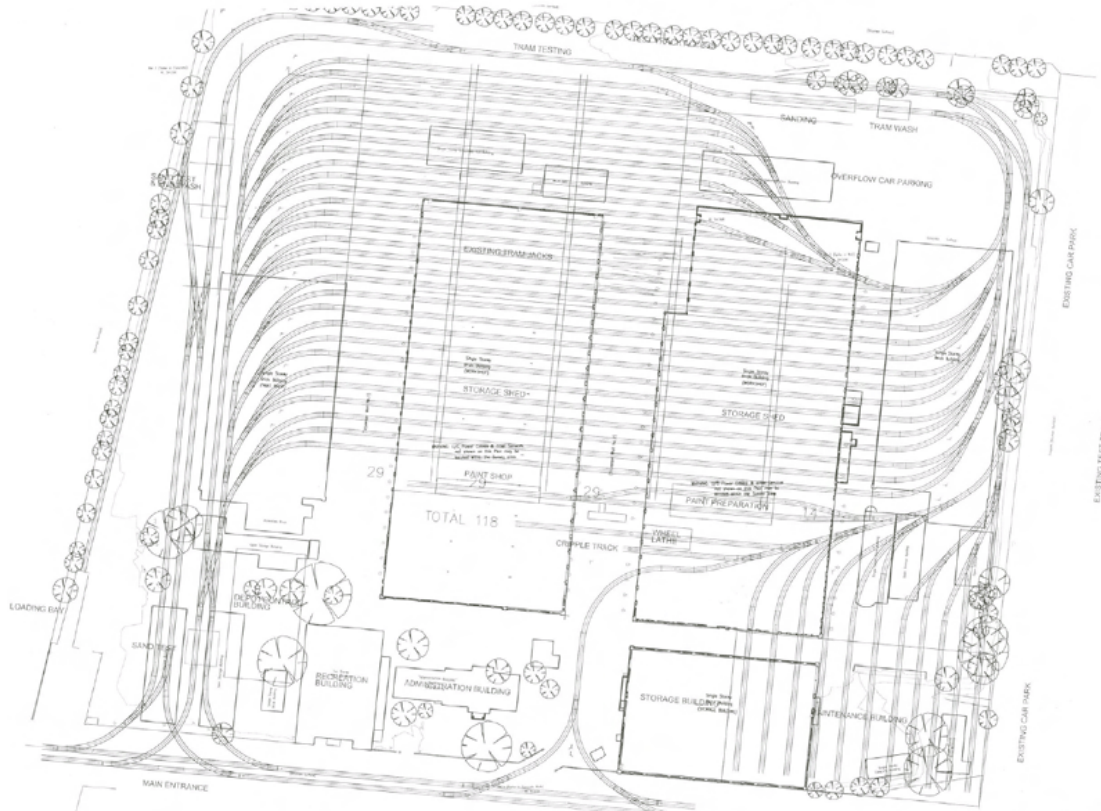


Figure 137: Track plan of Presto Workshops.²⁴⁵

6.6 Historical Collections

Historical collections related to tramway history and tram rolling stock are currently fragmented with variable levels of conservation and management. There are several tramway and tram museum collections which contain historical records and objects in conjunction with their primary collection of historic rolling stock. These include the following.

6.6.1 Tramway Museum Society of Victoria

The Tramway Museum Society of Victoria was founded in 1962 with the aim of preserving, restoring and operating trams. It operates the Melbourne Tramway Museum, located at 330 Union Lane, Bylands, Victoria, between Wallan and Kilmore.

The museum houses a large and varied collection of trams from Melbourne, Ballarat, Bendigo and Adelaide, as well as preserved buses and other work vehicles. Electric trams operate along a

²⁴⁴ Kevin Murray, “Preston Tram Workshops, Life after Malcolm, Atlantis Found in Preston,” <http://www.kitezh.com/trams/preston.htm>

²⁴⁵ VicSig, <http://forums.vicsig.net/viewtopic.php?f=13&t=1540>

1 km (1 mi) track, which was previously a part of the Heathcote Junction to Bendigo railway line. Besides the electric tram line, the Melbourne Tramway Museum also has a tramway electric supply substation, the William Street decorative overhead poles, the 1923 Batman Avenue shelter, various buildings for the storage of unrestored trams, cable tram cars and motor vehicles. It also has a visitor centre and exhibition shed and workshop.

At least some of its rolling stock is on loan to other tram museum venues such as the Hawthorn Tram Depot

6.6.2 Melbourne Tram Museum @ Hawthorn Depot

The former Hawthorn Tram Depot became the venue for the State government owned historic tram fleet from 2002, when the depot site was redeveloped partly for residential uses and partly as a permanent tram museum.

The Friends of Hawthorn Tram Depot Incorporated (ABN 11 293 508 607) has been established by VicTrack to assist with the operation of the Melbourne Tram Museum @ Hawthorn Depot. It is a volunteer-based non-profit group established under the Victorian Incorporations Act (incorporation number A00467102). It is composed of representatives from VicTrack, Heritage Victoria, honorary appointees with recognised expertise in tramway history and preservation, and elected representatives of its volunteer workers (friends).

VicTrack is the government-owned entity that manages the rail-based property and infrastructure owned by the State of Victoria, including many of its historic rail locations and heritage railway/tramway equipment.

The collection includes the following trams: MT&OC cable tram set, HTT 8, HTT 32, NMETL 13, VR 20, VR 53, MMTB L 104, MMTB L 106, MMTB S 164, MMTB T 180, MMTB X 217, MMTB W2 325, MMTB W 380, MMTB W1 431, MMTB Y 469, MMTB W2 510, MMTB Y1 613, MMTB X2 676, MMTB W5 774, MMTB W7 1040, MMTB PCC 1041.

6.6.3 Malvern Tramway Museum

The Malvern Tramway Museum is housed in the former hall at Malvern Tram Depot in Stanhope Street. It contains a combination of TMSV loaned material, Public Records Office official deposits, VicTrack owned material, and private collection items. Ownership does not appear to be well documented in all cases, although records of the PRO transfer and TMSV loan material have come to light.²⁴⁶

The TMSV Archive Collection was initiated by the late Bob Prentice in the 1960s and stored at his home in Prahran. At some stage all of the collection was handed over to the TMSV. A collection of copy images of historic photographs, taken by Bob Prentice from many sources on behalf of the TMSV, were not the handed over and remained with Bob Prentice's beneficiaries.

Robert Green and possibly Keith Kings, were made the TMSV archivists and arrangements were made for the TMSV to obtain access to three disused upstairs rooms at the Malvern Depot in which to store the collection. A grant was also obtained to purchase appropriate archive storage equipment and a Federal government funded cataloguing kit. The collection was roughly sorted

²⁴⁶ Correspondence Robert Green 11/6/2011.

out and stored in these rooms. Norm Maddock subsequently took on the management and opening the museum in the former Stanhope Street hall, to the public.

Following the abandonment of the old MMTB head office building, Kings and Green sorted and collected items from the basement of 673 Bourke Street. This material including books, plans, publications, official documents, reports etc. that the Public Records Office classed as Secondary Records.

The TMSV was permitted to take and house any of these documents at its rooms at Malvern Depot under an agreement with the PRO, which appointed the rooms as a “Place of Deposit for sentenced temporary and duplicate records of the Metropolitan Transit Authority”. Many boxes of records were thus taken to Malvern and stored. Also included was the A E Twentyman collection of cable tram material, which was acquired and transferred to the TMSV after his death. More recently funding was provided for a conservation assessment and some cataloguing, which it is understood was carried out by the VCCM, but was halted due to disagreements between the parties.

6.6.4 University of Melbourne Archives

Primary source of information on individual tramway employees and union records, is also located in the University of Melbourne Archives, which has its primary store in Dawson Street Brunswick.. The records of the Australian Tramways and Motor Omnibus Employees' Association, the Australian Transport Officers' Federation - Victorian Division, Rail, Tram and Bus Union (RTBU) and its predecessors now form part of the Australian Trade Union Archives held by this institution. However, access to these records may be restricted to scholars, or require prior consent from the RTBU.²⁴⁷

6.6.5 Public Record Office Victoria

Victorian Archives Centre of the Public Record Office Victoria located in North Melbourne. Extensive collections of material related to the MMTB, its predecessors, and subsequent government transport operators. This includes a collection of transport related photographs which feature a number of tram related scenes. The collection can be searched to some extent on the PRO web site along with the photo collection.²⁴⁸

6.6.6 National Film and Sound Archive

Although there is no specific tram collection among the National Film and Sound Archive collection, the organisation preserves a number of reels of film related to Melbourne's Trams, including rare footage of operating cable trams from the 1930s and the Hawthorn horse tram. These were compiled in a short documentary entitled *Commuting by Cable* (1988).²⁴⁹

²⁴⁷ University of Melbourne Archives, directory of holdings,
<http://www.lib.unimelb.edu.au/collections/archives/collections/unions.html>

²⁴⁸ Public Records Office Victoria, Guide to holdings, Agency VA 2694 Melbourne and Metropolitan Tramways Board and related agencies.

²⁴⁹ Production company Association of Railway Enthusiasts, Producer Rod Cook, Director Peter Henshaw, *Commuting by Cable* (1988). <http://aso.gov.au/titles/documentaries/commuting-cable/> National Film & Sound Archives

6.6.7 Bendigo Tramway Museum

The Bendigo Tramway Museum & Depot houses a collection of trams and tramway memorabilia and operates the "Talking Tram" tour to The Central Deborah Gold Mine. The Bendigo collection is currently undergoing a cataloguing program.²⁵⁰

6.6.8 Ballarat Tramway Museum

The Ballarat Tramway Museum is a Volunteer run organisation involved in the preservation and operation of vintage trams. As well as the tramcar collection (which includes Ballarat Horse Tram No. 1, three Electric Supply Company of Victoria tramcar bodies, twelve tramcars which initially ran in Melbourne between 1913 and 1951, and three acquired directly from Melbourne by the Museum in 1975) it retains a depot with a museum display of photographs and tramway memorabilia. The Museum has prepared a collection policy which includes a “...large collection artefacts, photographs, oral histories, small items and parts, form a comprehensive sample of the materials needed to operate and maintain a public transport tramway system and the people who operated it or collected its history. They can be used as a research and interpretation facility for those interested in the social development of Ballarat and public transport development in conjunction with the generation of electricity in Victoria’s major provincial cities.”²⁵¹

Types of objects in the collection include drawings, tickets, fare tokens, timetables, rulebooks, personnel records, operational paperwork, uniforms, Conductors’ bags, safeworking equipment, tramway street furniture (e.g. stop signs), record books, references used in the operation and maintaining the system, ancillary equipment such as a tower trucks.

6.6.9 Melbourne Tramcar Preservation Association

The Melbourne Tramcar Preservation Association was originally formed by a group of individuals in late 1974 as the Haddon Tramway Workshops, a registered business under which it was proposed to preserve historic tramcars. The collection includes, VR Tram 41, MMTB L103, MMTB W2 357, MMTB W2 407, MMTB W3 663, MMTB W4 670 and MMTB SW5 849, as well as components and a stretch of powered track.

6.6.10 Private collections

There are a large number of collectors of tram memorabilia, objects and trams. A. E. Twentyman was a critical figure in saving material related to the cable tram system, including a number of tram cars. His collection was placed at the Malvern Tram Museum after his death. Keith Kings published extensively on tram history, relying on his vast collection of material, including extensive photographic material.

Alan Bradley compiled a collection of historical material related to the Ballarat Tramways, in conjunction with his publications and work for the tramway museum. Peter Watson Duckett was one of Australia's pioneer tram enthusiasts and a foundation member of the Australian Electric Traction Association in 1943. His large collection of tram related books and magazines was housed in the Department of Transport Library.

²⁵⁰ <http://www.collectionsaustralia.net/org/1202/about/>

²⁵¹ Ballarat Tramway Museum, Collection Policy 2009, prepared by W Doubleday.
<http://www.btm.org.au/documents/btmcollpol.pdf>

Norm De Pomeroy was a Victorian Railways engine driver from Cressy, who compiled possibly the best collection of railway material in Australia. After his death in 2002, his collection was sold at auction and dispersed in various auctions from about 2005 to 2011.²⁵²

Bob Prentice was a tram enthusiast who as well as compiling a large collection of tram related photographs and documents (including large albums of tram tickets) also owned VR tram 20, willing it to the state government. He willed his collection to John Phillips.

Travis Jeffrey probably had Australia's best collection of tickets (particularly tram and bus tickets) and especially ticket machines. Most of his collection was put up for private auction in 2007.²⁵³

²⁵² Charles Leski Auctions, Auction Catalogue, Auction 263

²⁵³ Charles Leski Auctions, Auction Catalogue, Railway Memorabilia, Auction No.316, December 2007, <http://www.leski.com.au/news/20071019/index.php>

7.0 CULTURAL HERITAGE SIGNIFICANCE

7.1 Assessment criteria

Heritage Victoria is the State Government body responsible for protecting non-Aboriginal heritage places in Victoria, including gardens, buildings, shipwrecks and historical archaeological sites. Heritage Victoria administers the *Heritage Act 1995*, and has provided formal criteria for the assessment of cultural heritage significance. The application of these criteria will determine if a heritage place meets the threshold to be considered for addition to the Victorian Heritage Register.

The criteria used in the assessment are those adopted by the Heritage Council on 7 August 2008 pursuant to Sections 8(c) and 8(2) of the Heritage Act 1995. These criteria are:

Criterion A	Importance to the course, or pattern, of Victoria's cultural history
Criterion B	Possession of uncommon, rare or endangered aspects of Victoria's cultural history.
Criterion C	Potential to yield information that will contribute to an understanding of Victoria's cultural history.
Criterion D	Importance in demonstrating the principal characteristics of a class of cultural places or objects.
Criterion E	Importance in exhibiting particular aesthetic characteristics.
Criterion F	Importance in demonstrating a high degree of creative or technical achievement at a particular period.
Criterion G	Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons. This includes the significance of a place to Indigenous peoples as part of their continuing and developing cultural traditions.
Criterion H	Special association with the life or works of a person, or group of persons, of importance in Victoria's history.

7.2 Comparative Analysis

The analysis of Melbourne's tramways from the point of view of potential cultural heritage significance cannot be undertaken in a meaningful way in the usual manner, because it deals with a network of historic places, landscapes and features, portable objects and rolling stock, collections, and intangible values.

Comparison with tram networks overseas (see section 2.1), or remnants in other towns in Victoria and cities in other Australian states, or of past networks that have been decommissioned area also of little value. Comparison with other networks such as the railway, electricity, telephone or main road network may help understand the relative impact of these city wide systems, but still provide difficulty in making decisions regarding cultural significance. Therefore assessment of the overall network is made without consideration of comparative issues, while within the system a separate significance assessment can be made of individual elements in order to distinguish gradings of significance among the various depots, electricity substations or preserved historic trams.

As Melbourne retains the most extensive fixed rail street transport system in Australia, which maintains the general pattern of routes, depots and operation network as in the heyday of the mid 20th century, and also retains the largest collection of extant historic rolling stock (assumed to be pre 1960s) in Australia, and one of the largest in the world, then on this basis alone Melbourne's Tramway system is clearly of social and economic significance. It also compares in terms of the impact it had on the city's development and urban pattern with the major tramways of other cities. While most European and some American cities adopted tramways as a replacement for existing mature road transport such as omnibuses, but within a well developed urban setting, Melbourne stands out, as its tramways often went ahead of suburban and commercial development and therefore helped to bring about the suburbanisation of Melbourne.

The survival of large numbers of traditional style (W class) trams is unique in Australia, and rare in comparison with other cities. Adelaide retains five 1929 trams in operation. Blackpool has a small fleet of 1930s trams on its one line. Lisbon formerly had a large historic fleet, but most were retired or reconstructed around 1995, when the system was modernised. Milan has a relatively large 'historic' fleet of about fifty of the 1920s and 1930s 1500 series trams, but most other tram cities have modern fleets reflecting the resurgences of public transport in the last 20 years. The fact that so many overseas tourist trams are operated with ex Melbourne W Class trams provides an indication of the worldwide rarity, and demand, for such vehicles.

The buildings of the cable and electric tramways are also individually and collectively rare in a national and international context with parts of 12 of the original 13 cable tram engine houses of the 1880s and 90s, and seven electric tram depots dating from 1906 to 1925 (as well as others from 1936 and 1955).

Other early infrastructure also survives, including the company, trust and board administrative offices, the Preston Workshops, remnants of cable tram barns, electric substations, tram shelters, overhead wire pole, trackwork, cover plates and equipment cabinets, dating from the 1890s to 1930s (refer to section 2.1 and Table 1 above).

These represent the whole timeline of the system's inception growth and development into one of the most comprehensive street-based public transport systems of the late nineteenth and early twentieth centuries, in the world.

By comparison other surviving tramway depots in Australia are generally fragmentary, ruinous or heavily altered for other uses. Sydney has some remnants of the Ultimo (now Powerhouse Museum) Rozelle,²⁵⁴ Bondi Junction and Leichhardt depots, the Hamilton depot survives in part in Newcastle, and the Ipswich Depot in Brisbane is still a bus depot. Another characteristic of these other sites, is that the buildings tended not to have the elaborate architectural facades of say Malvern, Kew and Hawthorn, but were utilitarian corrugated iron sheds, or sometimes plain brick facades (with the exception of the long gone fort Macquarie depot – now the site of Sydney Opera House).



Figure 138: Fort Macquarie tram depot(Wikimedia commons)

Another exception (also demolished) was the Adelaide Angus St. depot unusually located in the centre city, but replaced with the construction of a new depot in Glengowrie.



Figure 139: City Tram Depot Angus St Adelaide- demolished 2006

²⁵⁴ Rozelle is the largest depot and one of 5 surviving tram depots in New South Wales, Godden Mackay Logan "Former Rozelle Tram Depot Conservation Management Plan, Sept 2004.

7.3 Statement of Significance for the Melbourne Tramway System

What is significant?

Melbourne's Tramway System incorporates the road and some reserve lines of electric traction tramways as currently constructed and reflecting the progressive development of firstly the Cable Tram network of the Melbourne Tramway and Omnibus Company commencing in 1885, secondly the electric tramways of the Victorian Railways from 1906 and the municipal tramway trusts from 1910, and thirdly the consolidation and extension of the system as a single integrated electric tramway network under the Melbourne and Metropolitan Tramways Board from 1920. It also comprises the operational and former depots, workshops, offices engine houses and tram sheds constructed for both the cable operated Tramway Trust and the municipal trusts and MMTB.

How is it significant?

Melbourne's tramway system is of historical, social, aesthetic and technological significance to the State of Victoria.

Why is it significant?

Melbourne's tramway system is of historical significance for its role in the historical development of the metropolis, and in particular the establishment and growth of middle class commuter suburbs of low density detached suburban housing which has become the defining character of 20th century Melbourne. *Criterion A*

Evidence of the former cable tramway system is significant historically as evidence of the largest single operator cable tramway in the world, which at the time revolutionized the nature of inner urban public transport. The cable tram system played a key role in the development (and eventual retention) of Melbourne's later tramway system. The system depended on a complex ownership and management relationship between the Melbourne Tramway Trust which built and owned the infrastructure, and the private monopoly under the Melbourne Tramway and Omnibus Company which provided the rolling stock and operated the system. *Criterion D*

Between 1885 and the cessation of the license agreement in 1916, the cable trams provided a reliable and frequent service within the inner city and acted as radial lines to outlying suburbs. Over time, various private and municipal organisations constructed electric tram lines beyond the cable termini, linking with the cable trams as feeder routes to the city.

The Melbourne and Metropolitan Tramways Board (MMTB) was created after the First World War, to amalgamate the cable and electric trams routes and integrate the system. Progressive rather than wholesale conversion of the large and effective cable tramway system to electric operation occurred over the course of the next two decades with the last cable tram running on the Northcote line in 1940. Some routes, such as the Johnston St. and Bourke St./Northcote lines were replaced with buses, although the Bourke St./Northcote/East Brunswick lines (present day routes 86 and 96) were reinstated with electric propulsion in time for the 1956 Olympics.

The decision to convert the cable tramway system over a period of two decades resulted in Melbourne having a relatively modern and well maintained electric tramway system by the 1950s, while other cities, such as Sydney, and Brisbane, which had established their electric (and steam) tramways earlier, were lumbered with older, rundown systems which had ceased to be

considered a viable alternative to the burgeoning private automobile. As a result, Melbourne did not need an expensive capital works program to maintain its tramways, and unlike the other cities, buses did not appear to be a financially appealing alternative. The extensive nature of the cable tramway system, and its slow and late conversion to electric operation, contributed to the relatively viable economic condition of MMTB system in the 1950s and the retention of a system which has become a symbol for Melbourne and Victoria.

The combined evidence of the electric tramways, both from the period of municipal tramway trust operation and under the MMTB is of historical significance for the role it played in the growth and development of Melbourne. The provision of relatively fast, clean and cheap on-road public transport to the outlying suburbs of Melbourne influenced the form and style of urban development and contributed as much as any single factor to the creation and maintenance of the ¼ acre block commuter suburbs. The tram system, more so than the preceding train network, allowed the middle classes to live in salubrious suburbs and commute to the city or industrial inner suburbs. The tramways were built as a civic exercise and maintained as much to ensure a quality standard of living for Melbourne's residents, as for whatever profit they could make.

The surviving elements of the Melbourne cable tramway system including 12 engine houses or remnants, and seven car sheds and/or car shed offices (of an original 15) as well as the few remnants of track infrastructure such as that at Abbotsford Street North Melbourne, are of state historical significance for their influence on Victoria through the development of the capital city.
Criterion C

The cable tram engine houses in particular, are of architectural and technical significance for their demonstration of the specific design requirements for the cable tram machinery. The machinery was technically innovative and the extensive nature of the system was a technical achievement. *Criterion E Criterion F*

Melbourne's tramways are of social significance as both a functional necessity for everyday use, and a symbolic and cultural identifier for Melbourne and Melbournians. The trams and tramways are the primary iconic image that distinguishes Melbourne in a tourist and public consciousness, taking the place of the Sydney Harbor Bridge and Opera House. *Criterion G social*

7.3.1 Statement of Significance for the Melbourne heritage tram fleet

What is significant?

Melbourne's heritage tram fleet comprises select examples of restored tramway rolling stock from the MTOC, tramway trusts and MMTB, reflecting the history of Melbourne's trams from the late nineteenth century to the 1970s. The heritage fleet includes examples of early toast-rack single truck trams, 'Californian combination' cars, early drop centre prototype twin bogie and the range of W class trams. The final MMTB designed z class prototype is also included.

How is it significant?

Melbourne's heritage tram fleet is of historical, social, architectural, aesthetic and technological significance to the State of Victoria.

Why is it significant?

'The heritage fleet at Hawthorn is of historical significance as a representative collection of rolling stock which demonstrates the history and development of tramways in Melbourne. In particular it is significant for the representation of all the variations of the W class. The fleet provides layered evidence of private and public provision of essential public service in Melbourne, and in the distinctive character and design of the trams, the changing function of the tramway system, and expectations of the user public. *Criterion A*

The fleet represents critical periods of Melbourne's development helping the city to become "Marvellous Melbourne" including the 1880s boom, the 1920s suburban expansion, and post World War Two growth. Melbourne's trams and in particular the W class, helped to establish the character and historical image of Melbourne as a civil and civilised, sophisticated and modern city, despite its colonial and pioneering origins. *Criterion D*

The trams, and the W Class in particular are of social significance as the iconic image of Melbourne, which is recognised around the world and universally by Melbourne residents. *Criterion G*

The tram fleet is of technical significance for its ability to demonstrate the progressive design changes and response to technology achieved in electric traction from the beginning of the 20th century up to the post war period. *Criterion F*

The fleet is of aesthetic significance for the care and attention paid to the presentation of trams in the first half of the 20th century, as demonstrated in the precise joinery, use of attractive local timbers, polished brass and chrome fittings, and the traditional coach building skills and design of the trams. The distinctive colour schemes, whether of the early trusts, the chocolate and cream original MMTB, or the later ubiquitous cream and cream are part of the aesthetic appeal of the trams. The green and cream colour scheme is of special aesthetic value in that it was devised specifically to suit the character of Melbourne's tree-lined boulevards such as St. Kilda road, and Royal Parade. *Criterion E*

7.4 Statements of significance for individual places

7.4.1 South Yarra cable tram engine house



What is significant?

The former South Yarra cable tram engine house is located at 241-257 Toorak Road South Yarra and the tram shed is at 625 Chapel Street. It was constructed by Melbourne Tramway & Omnibus Company to the design of the company's architect Frederick Williams in 1887-88 to power the Toorak and Chapel Street cable lines and house the trams.²⁵⁵ This complex of modified brick buildings has remnants of the original structure disguised beneath the Modernist and Classical Revival architectural details of a conversion for the Capitol Bakery undertaken by Architect Harry Norris in 1936.

How is it significant?

The South Yarra cable tram engine house and car shed are significant for scientific (technical), historic, social and aesthetic/architectural, reasons at a State level.

Why is it significant?

The South Yarra cable tram engine house and car shed are of historical significance as an important surviving remnant of the once extensive cable tram network which represented the technical, financial and administrative power of Marvellous Melbourne at the end of the nineteenth century. *Criterion A*

The site is significant as one of a network of formerly twelve engine houses that were built to power the Melbourne cable tram network, itself internationally significant as the world's largest single-operator cable tram system in comparison to the eight separately managed systems of the San Francisco cable tram network. The Melbourne cable tram system still represents the largest surviving collection of intact cable tram buildings in the world. *Criterion B Criterion D*

The Toorak Road engine house and Chapel Street car shed are significant as the only relics of the Toorak line and form an important landmark on the Toorak Road/Chapel Street intersection. *Criterion B.*

²⁵⁵ Former Cable Tram Engine House/Capitol Bakeries conservation analysis / Michael Taylor

The cable tram engine house is significant as an important example of the work of Harry Norris, a prolific Australian architect, instrumental in introducing ideas of modernist architecture to Melbourne in the 1920s and 30s, including the distinctive 'Art Deco' decorative style which is well represented in this building. *Criterion H*

The building is also significant for its associations with the Capitol Bakeries, which in the 1930s developed one of the most up-to-date commercial bakeries in Melbourne, using state-of-the-art mass production methods including automatic dough preparation machines, ovens, conveyors, wrapping machines and counters. *Criterion A*

The site is of technical significance for its layout and arrangement of facilities, demonstrating the unique aspect of the cable tram system in requiring an engine house roughly midway along the cable routes, and convenient to the two different lines that converged at this corner. *Criterion F*

The site is of social significance for the association of the building with a recreational use in recent decades which has contributed to the cultural life of South Yarra, despite the site being seen as somewhat tacky today. *Criterion G*



Existing designation: National Trust B6699; RNE15349; HI H7822-2247, H7822-2232, H7822-2231. H7822-2259; Submission to Victorian Heritage Council 2011

7.4.2 Brunswick cable tram engine house



What is significant?

The Brunswick cable tram engine house is located at 253-263 Brunswick Road, Brunswick. It was constructed by the MT&OC in 1887 and unlike some of the later buildings, has a fairly plain façade, originally of polychrome brick with arched window openings. The adjoining electricity substation (in part of former cable tram engine house) was constructed in 1925 on the corner of Brunswick Rd and Black St.

How is it significant?

The Brunswick cable tram engine house is of historical, architectural, aesthetic and technological significance to the State of Victoria.

Why is it significant?

The Brunswick cable tram engine house is of historical significance as an important surviving element of Melbourne's former cable tram system (which as a whole is of national Significance). *Criterion A*

The site is significant as one of a network of formerly twelve engine houses that were built to power the Melbourne cable tram network, itself internationally significant as the world's largest single cable tram system, i.e. it was all owned and managed as one system. *Criterion D Criterion B*

It reflects the importance of this transport system to the development of Brunswick and the characteristic arrangement and positioning of the buildings on the system, where large low buildings were required to house the steam engines and cable winding gear in adjoining sections. These were required to be positioned about midway along the cable runs. As such the building helps understand the unique operation and technology of the system. *Criterion F*

Architecturally, the Brunswick Engine House was of simpler design than many other Engine Houses in Melbourne, and reflects the earlier form of building, now mostly lost with the demolition of the Richmond engine house. *Criterion E*

Existing designation: Heritage Overlay HO41, Heritage Inventory Site H7822-2242, National Trust B6409

7.4.3 Windsor cable tram engine house



What is significant?

The former Windsor cable tram engine house is located at 105 Wellington Street St. Kilda. It was constructed by the P&MTT in 1891. The building comprises a timber framed pitched roof main space with rendered brick façade (believed to be a later addition). The internal structure has been lined, but the main part of the building appears intact.

How is it significant?

The former Windsor cable tram engine house is of historical, social, architectural, aesthetic and technological significance to the State of Victoria.

Why is it significant?

The former Windsor cable tram engine house is of historical significance as an important surviving element of Melbourne's former cable tram system (which as a whole is of national Significance). It reflects the importance of this transport system to the development of the St Kilda area and the characteristic arrangement and positioning of the buildings on the system, where large low buildings were required to house the steam engines and cable winding gear in adjoining sections. These were required to be positioned about midway along the cable runs. As such the building helps understand the unique operation and technology of the system. *Criterion A*

The site is significant as one of a network of formerly twelve engine houses that were built to power the Melbourne cable tram network, itself internationally significant as the world's largest single cable tram system, i.e. it was all owned and managed as one system. *Criterion B Criterion D*

The Windsor Engine House is of scientific (technological) for its ability to assist in an understanding of the operation of the cable tramway system, the operation of cable tram machinery and the storage of cable trams. *Criterion F*

Architecturally, the Windsor Engine House is of interest in reflecting the evolution of design of the buildings from plain brick buildings of the earliest period, to the extravagant designs demonstrated by the Gertrude Street Engine house, and to more restrained but simply decorated buildings of the 1890s. *Criterion E*

Existing designation: Heritage Inventory Site H7822-2248; Heritage Overlay HO360

7.4.4 South Melbourne cable tram car shed office



What is significant?

The former South Melbourne Cable Tram Car Shed office is located at 176-178 Victoria Avenue, Albert Park. It was constructed by the MT&OC in 1890 for storage of cable trams, and for the traffic office used for administrative staff and amenities and extended with a second storey by the Tramway Board architect Stapley in 1918.

How is it significant?

The former South Melbourne Cable Tram Car Shed office is of historical, social, architectural, aesthetic and technological significance to the State of Victoria.

Why is it significant?

The former South Melbourne Cable Tram Car Shed office is of historical significance as an extant component of Melbourne's cable tramway system. The system was of an exceptionally large size when considered against other systems internationally and its long period of use relative to other systems underscores its importance. The system has been a major influence on the development of metropolitan Melbourne. The office is a rare example of the facilities provided for tram storage and operation as opposed to the more commonly surviving engine houses. *Criterion A*

The buildings is also historically significant as a demonstration of the evolution and transition of the cable tram system, following the expiration of the MT&OC lease, and its reversion to the Tramway Board, prior to the formation of the MMTB. *Criterion A*

The South Melbourne Cable Tram Car Shed office is of architectural significance for the method of construction and expression of the building forms employed by the Melbourne Tramway & Omnibus Co, and later Tramway Board to express the utilitarian nature of the their use. *Criterion E*

The South Melbourne Cable Tram Car Shed office is of archaeological significance for the potential to provide information on the cable tram operation. Tram tracks and cable tunnels may survive under the adjoining property. *Criterion F*

Existing designation: Heritage Inventory Site H7822-2233

7.4.5 Brighton Road cable tram car shed and office



What is significant?

The former MT&OC Brighton Road Cable Tram Car Shed and office are located at 16 Brighton Rd & 2 Brunning Street Balaclava. It was constructed by the MMTB in 1888 for storage of cable trams, and for the traffic office used for administrative staff and amenities, with a second story office addition by the Tramway Board architect Barlow 1918.

How is it significant?

The former MT&OC Brighton Road Cable Tram Car Shed and office are of historical, social, architectural, aesthetic and technological significance to the State of Victoria.

Why is it significant?

The former Brighton Road Cable Tram Car Shed and office is of historical significance as an extant component of Melbourne's cable tramway system. The system was of an exceptionally large size when considered against other systems internationally and its long period of use relative to other systems underscores its importance. The system has been a major influence on the development of metropolitan Melbourne. The office is a rare example of the facilities provided for tram storage and operation as opposed to the more commonly surviving engine houses. *Criterion A*

The buildings is also historically significant as a demonstration of the evolution and transition of the cable tram system, following the expiration of the MT&OC lease, and its reversion to the Tramway Board, prior to the formation of the MMTB. *Criterion A*

The Brighton Road Cable Tram Car Shed and office is of architectural significance for the method of construction and expression of the building forms employed by the Melbourne Tramway & Omnibus Co, and later Tramway Board to express the utilitarian nature of the their use. *Criterion E*

The Brighton Road Cable Tram Car Shed and office is of archaeological significance for the potential to provide information on the cable tram operation. Tram tracks and cable tunnels may survive under the floor of the former car shed. *Criterion F*

Existing designation Heritage Inventory Site H7822-2238

7.4.6 Clifton Hill cable tram car shed office



What is significant?

The former Clifton Hill Cable Tram Car Shed office is located at 480-484 Queens Parade & 266-284 McKean Street, Fitzroy North. It was constructed by the Tramway Board in 1925 to expand the existing 1886 MT&OC depot. During the Second World War, the building was used for a gas producer plant, as a response to fuel shortages for the busses employed to replace the High Street Cable tram, and hence the large vents along the ridge line. The adjoin electricity substation was constructed in the 1950s when the line was finally electrified in tome for the Olympic Games in 1956 along with others in 3-5 Martin Street, Thornbury

How is it significant?

The former Clifton Hill Cable Tram Car Shed office is of historical, social, architectural, aesthetic and technological significance to the State of Victoria.

Why is it significant?

The former Clifton Hill Cable Tram Car Shed office is of historical significance as an extant component of Melbourne's cable tramway system. The system was of an exceptionally large size when considered against other systems internationally and its long period of use relative to other systems underscores its importance. The system has been a major influence on the development of metropolitan Melbourne. The office is a rare example of the facilities provided for tram storage and operation as opposed to the more commonly surviving engine houses. *Criterion A*

The Brighton Road Cable Tram Car Shed and office is of architectural significance for the method of construction and expression of the building forms employed by the Melbourne Tramway & Omnibus Co, and later Tramway Board to express the utilitarian nature of the their use. *Criterion E*

The buildings is also historically significant as a demonstration of the evolution and transition of the cable tram system, following the expiration of the MT&OC lease, and its reversion to the Tramway Board, prior to the formation of the MMTB. This is visually evident from the rare 'TB' monogram on a plaque on the front of the office building denoting the 'Tramway Board'. *Criterion A*

Existing designation: Heritage Inventory Site H7822-2240

7.4.7 Sandringham VR tram depot



What is significant?

The Sandringham VR Tram Depot is located at Station Street & Bay Road Sandringham (railway yard). The Sandringham to Black Rock line was opened by the Victorian Railways on the 10th March 1919 with the depot designed and constructed by the Architects Division, Ways & Works Branch, Victorian Railways.²⁵⁶

Unlike the other Victoria Railways line from St. Kilda to Brighton Beach, which was built to the Victorian Railways broad gauge, the Sandringham to Black Rock line was constructed to standard gauge (4 foot 8 and a half inches) but despite its compatibility with the rest of the Melbourne tramways, it was still not a success..

The route was inland of the former horse trams to avoid disturbance to the extensive foreshore reservations along Port Philip Bay. On the 1st of September 1926 a 3.5 kilometre extension from Black Rock to Beaumaris was opened. Other than holiday periods the line was unsuccessful and was closed 5 years later on the 31st of August 1931.

A small three road depot was constructed in the Sandringham railway station yard. This connected to the tramway in Bay Street. With the exception of the short section of track between the depot and the front of the railway station, the rest to Black Rock was double line. Post war lifting of petrol rations resulted in the line closing on the 5th of November 1956. The trams were transferred to Elwood Depot.

The tram depot building has the form of a typical railways locomotive shed with brick side walls open ends and timber gable truss roof. The original cement tiles are at least partly replaced with corrugated iron and part has only exposed trusses. A separate single story brick electrical substation is at the rear. The depot building remains in use as a bus depot, although access from Bay Street is no longer possible with a row of shops being built along Bay Street.²⁵⁷

How is it significant?

The Sandringham VR Tram Depot is of historical, social, architectural, aesthetic and technological significance to the State of Victoria.

²⁵⁶ Green, Robert, 1990, Research Report on Melbourne Electric tramway depots, for Heritage Victoria.

²⁵⁷ Stone, Arthur, The Sandringham Tramway *Running Journal*– Volume 6, Number 2, Oct-Nov 1969

Why is it significant?

The Sandringham VR Tram Depot is of historical significance as rare evidence of the former Victorian Railways 'street railway' and a reflection of the role of political patronage in the development of public infrastructure. It is the only substantial surviving structure of the Victorian Railways tramways that remains to tell this important component of the story of Melbourne's Trams. *Criterion A*

The building is of architectural significance for its characteristic form and use of polychrome brickwork to render an otherwise utilitarian building attractive. *Criterion E*

Existing designation: HO HO328 recommended for inclusion on VHR in Sandringham Conservation Study



7.4.8 Brunswick MMTB tram depot



What is significant?

The Brunswick Tram Depot is located at 807-813 Sydney Road Brunswick, City of Moreland. It was constructed by the MMTB in 1936 probably to the design of the Board architect A.G. Monsborough, who had also designed the Wattle Park Chalet the Carlton control centre in Bouverie Street. The nine track car shed has open pit floor construction, brick walls, clear span steel frame truss sawtooth roof. An attached single storey brick workshop on Peveril Street and a frontage of attached single store shops along Sydney Road (continuing the Kew approach to revenue raising from the site lease).. The separate two storey Revenue and Traffic office building fronts Sydney road, featuring tall arched openings with bronzed metal panels and clerestory roof. Art deco detailing is evident on the various stepped frontages including raised horizontal brick bands, flagpole fins and geometric mouldings.

How is it significant?

The Brunswick Tram Depot is of State significance for historical, Technical, Aesthetic and social reasons.

Why is it significant?

The site is significant for its association with the dramatic mid twentieth century expansion of Melbourne's tram network and the preceding role of the site since the construction of the cable tram depot in 1887. The formation of the MMTB in the 1920s, and its rationalisation of the previous separate municipal and private tramways, gave Melbourne one of the most efficient public transport systems in Australia (or possibly the world.) the scale and architectural detail of the Brunswick depot reflects the confidence and importance of the tramway board, and hence the government support and finance that was available in the 1930s, despite the impact of the Depression and impending war. *Criterion A*

The buildings are also significant as an important example of the work of the MMTB architect A G Monsborough, who implemented a range of Modern styles in substations, depots and the MMBW administrative buildings. *Criterion H*

The site is of technical significance for its layout and arrangement of facilities, demonstrating the need to retain a street frontage while providing ready access for trams from the rear. In this respect the Cameron Street and Moreland Road tramlines are integral to the place. *Criterion F*

The Brunswick Depot is of aesthetic and architecture significance for the wealth of Modernist and Classical revival design detail, and the unusual combination and massing of forms with its abstracted classical facade unusual for its type. *Criterion E*

The depot is of social significance for the role it has played in recent union and labour relations, and in particular in the 1990 tramway strike which is still remembered and commemorated by former and current workers, the radical union movement, and general community. *Criterion G*

Existing designation: Included in Moreland Heritage Overlay HO171 Heritage Inventory Site H7822-2252

7.4.9 Camberwell MMTB Depot tram shed and administration office



What is significant?

The Camberwell MMTB Depot tram shed and administration office are located at 160-170 Camberwell Road administration office 8 Council Street Hawthorn East / Camberwell. It was constructed by the MMTB to the design of the Board architect A G Monsborough, and opened in December 1929 housing 63 cars under cover on nine 'roads' which operated on the Burwood and Wattle Park routes, having previously run from the Malvern depot. The tram shed was extended to its current size by 1932. The tram shed has double-height red face brick walls in English bond, with clinker brick window sills, lintels and mullions, brick rustication marking out bays, cement rendered parapet and frieze, with the letters MMTB (Melbourne and Metropolitan Tramways Board) in two projecting bays at each end of the Camberwell Road elevation.²⁵⁸ A first floor amenities block was added to the south west end of the car shed in 1981.²⁵⁹

The roof sawtooth supported on is a large bolted steel lateral trusses. The fence with red brick piers, cement rendered caps and steel mesh webbing in an iron tube frame at Council Street and tubular steel overhead wiring poles appear original. The double storey Neo-Georgian administration building is of red faced brick with slate tiled roof. This was the former Traffic and Revenue office. It features textured stucco Roman Doric columns, supporting a central balcony, rusticated brick corners indicating quoins, two breakfront wings with twin gables at west elevation, with a colonnaded tholos porch is at the north end and hipped slate roof on steel trusses. Gas lighting fixtures were extant in the Revenue office. An early timber passenger waiting shed at the Riversdale Road entrance to the site adds further interest.

How is it significant?

The Camberwell MMTB Depot tram shed and administration office is of historical, architectural, and aesthetic significance to the State of Victoria.

Why is it significant?

The Camberwell MMTB Depot tram shed and administration office is of historical significance as one of four major surviving tram depots in the eastern suburbs, along with Malvern, 1910, Hawthorn, 1915-16, and Kew, 1916. Each is of a very different architectural style reflecting the changing administration of the system and prevailing architectural style, but all reflect the civic

²⁵⁸ R Elphinstone, Camberwell Junction Heritage Study, 1991; additional research by Lovell Chen, Camberwell Heritage Study 2008. Lovell Chen, Camberwell Junction Heritage Review 2008.

²⁵⁹ Green, Robert, 1990, Research Report on Melbourne Electric tramway depots, for Heritage Victoria

concerns of the tramway trusts and later MMTB for creating a lasting civic benefit from its facilities, which included ensuring the structures it erected were harmonious with their surroundings, despite the industrial nature of their required function. *Criterion A*

This was the first of the new MMTB design depots incorporating column-free car shed spanning nine tracks and an open pit floor construction for maintenance. Other similar car shed were later added at Malvern (car shed 2) and Brunswick. *Criterion F*

The tram shed and associated administration building are of historical significance in that they demonstrate the direct result of the extension of the electric tram system in the area as a consequence of both the amalgamation and integration of the former municipal tramway trusts and cable system, and the impact of the tram system on the growth and accessibility of the expanding suburbs to the east, including Camberwell and beyond. *Criterion A*

The tram shed is of aesthetic significance as a prominent and dramatic streetscape element in its own right, while the administration building is a distinctive example of Neo-Georgian design as applied in a public works context. *Criterion E*



Existing designation: proposed Heritage Overlay in Camberwell Heritage Review

7.4.10 Kew P&MTT Tram Depot offices tram shed and shops



What is significant?

The Kew Tram Depot, including offices, tram shed and shops is located at Barkers Road Kew. The complex was constructed in 1915 by the Prahran and Malvern Tramway Trust probably to the design of the Trust architect Leonard Flannagan, to accommodate the trams intended to work the converted former horse tram line which Victoria Bridge to Boroondara Cemetery. The new electric line enabled trams to run from the Burke Road and Cotham Road line to Kew Junction, and then on to connect with the cable tram network at Victoria Bridge. The need for a further depot was considered as early as 1913 and plans and specifications for the Kew car depot and converter station were in course of preparation in 1914 with the building capable of accommodating 95 cars. The cost of converting the Kew and Hawthorn horse trams, as well as constructing extensions depot and office accommodation was put at £650,000 in 1913.²⁶⁰

The building takes the form of a long sawtooth roofed car shed with red brick two story traffic office accommodation and, in an unusual move to generate revenue from the land holdings, three shopfronts for leasing along Barkers Road. Other shops were erected by the Trust in instances where they required land for road realignments.²⁶¹ The machine and battery room were constructed in 1915 (by W. C. Burns for £6234).²⁶²

The outer walls display a classical revival style featuring parapets along the street frontages with large pediments on Barkers Road. Bands of painted cement render between the windows and forming a wide frieze create the horizontal motifs, while projecting pilasters frame the windows. A long series of large arched windows are a feature of the High Street frontage.

The tram shed entry was via a skewed approach with the timekeeper's office on the chamfered corner. A separate loop track runs around the north of the building to exit onto High Street.

How is it significant?

The Kew Depot tram shed and shops are of historical and aesthetic significance to the State of Victoria.

²⁶⁰ *The Argus* 22 Apr 1914

²⁶¹ P&MTT Quarterly Report to 30/06/1914 Quarterly Report to 31/12/1915, copies provided by Robert Green.

²⁶² *Malvern Standard* 6 February 1915, p. 3.

Why is it significant?

The Kew tram depot is of historical significance as one of four major surviving tram depots in the eastern suburbs, along with Malvern 1910, Hawthorn 1915-16 and Camberwell 1929, which provide evidence of the expansion of the suburban municipal tramway system in the early 20th century. The building is the third oldest surviving depot in metropolitan Melbourne, the largest of the new works undertaken by the Prahran & Malvern Tramway Trust during its decade of existence, and reflects the status of the trust and the importance of suburban tramways. *Criterion A*

Each of the main tram depots is of a very different architectural style reflecting the changing administration of the system and prevailing architectural style, but all reflect the civic concerns of the tramway trusts (and later the MMTB) for creating a lasting civic benefit from its facilities, which included ensuring the structures it erected were harmonious with their surroundings, despite the industrial nature of their required function. *Criterion E*

The tram shed and associated administration building and shops are of historical significance in that they demonstrate the direct result of the extension of the electric tram system in the area as a consequence of expansion of the municipal tramway trusts and conversion of the former horse tram routes through Kew and Hawthorn and the impact of the tram system on the growth and accessibility of the expanding suburbs to the east. These provided the links to the inner city cable tram network, which ultimately was converted to electricity by the MMTB to create a single integrated electric tramway network. The buildings are also of significance for their association with the notable architect Leonard Flannangan, who was also responsible for the Hawthorn Depot with which comparisons can be made.²⁶³ *Criterion H*

The tram shed offices and shops are of aesthetic significance as a prominent and dramatic streetscape element in its own right, while the administration building is a distinctive example of classical revival as applied in a public works context. It is an imposing building constructed on a prominent site. The adoption of a curved facade, the use of a repetitious American Romanesque style, and the unusually angled corner site add to the impact of the design. *Criterion E*



Existing designation:

²⁶³ See Taylor, J.D., 'Leonard John Flannangan 1864-1946.' Thesis (Undergrad)--University of Melbourne, Faculty of Architecture, Building and Planning. T0013.

7.4.11 P&MTT tram shelters

	
<p>Riversdale Road, outside Camberwell Tram Depot, East Hawthorn;</p>	<p>Riversdale Road, S.E. cnr Highfield Street, Camberwell</p>
	
<p>Camberwell Road, Fordham Gardens, Camberwell</p>	<p>Camberwell Road, S.W. cnr Bowen Street, Camberwell City of Boroondara.</p>

What is significant?

The P&MTT tram shelters are located at: 1. Riversdale Road, outside Camberwell Tram Depot, East Hawthorn; 2. Riversdale Road, S.E. cnr Highfield Street, Camberwell; 3. Camberwell Road, Fordham Gardens, Camberwell; and 4. Camberwell Road, S.W. cnr Bowen Street, Camberwell City of Boroondara.

The Tram Shelters were constructed by the Hawthorn Tramway Trust possibly to the design of L J Flanagan, and built in c1917. They take the form of simple timber-framed, gable roofed structures with timber boarded back and ends rising to about three quarter height and topped with framed panels, and open side to the street. Variations in form include the gambrel roof at the depot, and inset ends for additional seats at Highfield Rd and Fordham Gardens.²⁶⁴

How is it significant?

The P&MTT tram shelters are of historical, social, architectural, aesthetic and technological significance to the State of Victoria.

²⁶⁴ National Trust Classification Report B7041 – Tram Shelters (4).

Why is it significant?

The P&MTT tram shelters are of historical significance as evidence of the former role of the Prahran and Malvern Tramway Trust as a public amenity and in the expansion of the suburban municipal tramway system in the early 20th century. The tramway trust assisted in encouraging suburban development in the south eastern and eastern suburbs, through the provision of a quick and reliable public transport commuter service.

The P&MTT tram shelters are a significant group of a total of 16 early tram shelters that survive in inner city and the middle ring suburbs that are together considered the most important, and enjoyed items of historic street furniture in Melbourne. They are widely regarded as an essential part of the character of Melbourne as a 'tram city', and important historic elements of the tram system. The shelters are important as almost the only tangible reminders of the Hawthorn Tramways Trust, along with the Depot building at Wallen Road. They are particularly important for identifying part of the route of this relatively small but important system, allowing an understanding of the fragmented nature of the development of the electric tram system in the early years of this century. *Criterion A*

The shelters are socially significant as recognisable elements of the historic streetscapes and provided shelter to many commuters over the years, and provided delight to the thousands of passers-by. *Criterion G*

Architecturally, they are simple but interesting and pleasing timber structures, with some rustic or Edwardian era design qualities. They all feature an expressed post structure, with weatherboard, vertical boarding, or timber shingle walls, and pitched roofs, with overhanging eaves and projecting gable ends. *Criterion E*

The shelters are also of significance for their association with the notable architect Leonard Flannagan, who was also responsible for the Hawthorn Depot.²⁶⁵ *Criterion H*

Existing designation: National Trust B7041

²⁶⁵ See Taylor, J.D., 'Leonard John Flannagan 1864-1946.' Thesis (Undergrad)--University of Melbourne, Faculty of Architecture, Building and Planning. T0013.

7.4.12 St Kilda-Brighton Tramway Tram shelter



What is significant?

The St Kilda-Brighton Tramway Tram shelter is located at Green Point Gardens, off the Esplanade Brighton. It was constructed by the Victorian Railways for the 5ft 3 ½ inch gauge St Kilda Brighton tramway in 1906 and moved to Brighton gardens on The Esplanade opposite Norwood Avenue (now known as Green Point Gardens), in 1909 by the City of Brighton. The building comprises a timber framed structure, open on one side, and featuring a high dado of horizontal grooved boards around the other three walls. The tiled roof is probably a replacement.

How is it significant?

The St Kilda-Brighton Tramway Tram shelter is of historical, social, architectural, aesthetic and technological significance to the State of Victoria.

Why is it significant?

The St Kilda-Brighton Tramway Tram shelter is of historical significance as a rare and probably unique reminder of the former Victorian Railways operated St Kilda-Brighton Tramway. The St Kilda Brighton Tramway was the first publically operated electric tramway in Melbourne, and was unique in its construction to the railways gauge and operation by Victorian Railways.

Criterion A

It is particularly rare as evidence of the former railway gauge St Kilda-Brighton Tramway and probably the only physical evidence of this early venture. *Criterion B* As such it is important for its association with the period of political patronage which determined the way civic works were funded and commissioned, in this case directly associated with the prominent Victorian land developer and politician Thomas Bent. *Criterion H*

The shelter is of aesthetic significance as a simple but architecturally interesting and pleasing timber structure, with some rustic or Edwardian era design qualities. *Criterion E*.

Existing designation: HO HO165

7.4.13 St. Kilda Rd & Commercial Road Tram Shelter



What is significant?

The St. Kilda Rd & Commercial Road Tram Shelter is located on the north east corner of St. Kilda Rd & Commercial Road Melbourne. The shelter was built by the P&MTT in 1915 at the connecting point between the city bound terminus of the Malvern Road electric tram route and the St Kilda road cable tram service of the Melbourne Tramway & Omnibus Co. for passengers to change over for continuing their journey to the city.

The building is a simple timber framed structure with a raised timber floor and is clad to sill height externally in horizontal ship-lap weatherboards and internally in vertical v jointed lining boards. Similar boards cover the ceiling. The benches are of timber frames and slats. The upper halves of timber framed windows are in multi-paned patterned translucent glass with a segmental arch head. Half of the wall of the shelter facing the tram stop is open (a former opening in the back having been closed in the restoration). The framing continues above with a single skin of vertical boarding set in to the same depth as the window. The gable section of wall is clad in vertical slats spaced to give ventilation. The gable roof is clad in terracotta shingles with a plain terracotta ridge. The rafters are exposed under the projecting eaves with a spaced board lining above. The gables project a similar distance to the eaves and are supported on simple timber brackets. The upper section is filled with a horizontal board at ceiling height to match the barges and an infill of vertical spaced boards. The detailing of the barges and the projecting ridge beam is a simplified form of that on the St Kilda Road/High Street shelter diagonally opposite.²⁶⁶

The building was reconstructed in 2001 following serious damage when hit by a truck.²⁶⁷

How is it significant?

The St. Kilda Rd & Commercial Road Tram Shelter is of historical, social, architectural, aesthetic and technological significance to the State of Victoria.

²⁶⁶ National Trust classification report, B7043,
http://www.natstrust.com.au/trust_register/search_the_register/tram_shelter__3

²⁶⁷ Despite reconstruction and the replacement of much fabric it might still be considered visually original for example the case of the St. Kilda Pier Kiosk as precedent for a place retaining its heritage values following almost complete rebuilding.

Why is it significant?

The St. Kilda Rd & Commercial Road Tram Shelter is of historical significance for its association with the development of Melbourne's electric tram system and the connection with cable tramway network which played an important part in the history of transport in Melbourne. The shelter is also historically significant for the part it played in the link between the cable and electric tramway systems, as it was located for customers waiting to transfer between the Prahran and Malvern Tramways Trust electric line on Commercial Road and Malvern road, and the St Kilda Road cable tramway. *Criterion A*

Though a reconstruction, it is a prominent reminder of the former Prahran & Malvern Tramway Company, a municipal enterprise set up in the early years of this century, which became the largest independent electric tram network in the suburbs. *Criterion D*

Architecturally, it is an unusual Edwardian design, featuring diagonal red cement sheet roof tiles, and expressed timber framing which is both an interesting and pleasing timber structure, with rustic or Edwardian era design qualities. It is similar in form and its 'rustic' style to the three other St. Kilda Road examples, and the Macarthur Street example, all designed later, and may have provided their inspiration. They all feature an expressed post structure, with weatherboard, vertical boarding, or timber shingle walls, and pitched roofs, with overhanging eaves and projecting gable ends. *Criterion E*

The shelter is socially significant as a recognisable element of the historic streetscape and provided shelter to many commuters over the years, and provided delight to the thousands of passers-by. *Criterion G*

The shelter is also of significance for its association with the notable architect Leonard Flannangan, who was also responsible for the Hawthorn Depot.²⁶⁸ *Criterion H*

Existing designation: RNE 18943, National Trust B7043

²⁶⁸ See Taylor, J.D., 'Leonard John Flannangan 1864-1946.' Thesis (Undergrad)--University of Melbourne, Faculty of Architecture, Building and Planning. T0013.

7.4.14 St Vincent Plaza Tram Shelter



What is significant?

The St Vincent Plaza Tram Shelter is located at Victoria Parade, cnr Brunswick St (St Vincent Plaza) Melbourne. It was constructed by the MMTB in 1933 to the design of MMTB architect A. G Monsborough the shelter was reconstructed and relocated to the opposite side of the tram track, in 2010 in order to allow an extra track and construction of Superstop platforms. The reconstruction and restoration was supervised by heritage architects Lovell Chen.

How is it significant?

The St Vincent Plaza Tram Shelter is of historical, social, and aesthetic significance to the State of Victoria.

Why is it significant?

The St Vincent Plaza Tram Shelter is of historical significance as rare structure demonstrating the civic qualities of the expansion of the electric tramway system under the MMTB. It is one of largest shelters and of unique form, having been erected in 1933, soon after the electrification and extension of the tram lines it serves. *Criterion A*

The shelter is architecturally significant for its charming picturesque pavilion form, displaying an Arts & Crafts influence, with notable details including the slate roof, shingled gables, decorative brick base, paired corner columns, and particularly the curved brackets. *Criterion E*

The shelter is socially significant as a recognisable element of the historic streetscape and provided shelter to many commuters over the years, and provided delight to the thousands of passers-by. *Criterion G*

The shelter is also of significance for its association with the notable MMTB architect A. G Monsborough, who was also responsible for most of the tramway designs from the formation of the board until his retirement in the 1950s. *Criterion H*

Socially and historically, the shelter is part of a group of 16 early tram shelters that survive in inner city and the middle ring suburbs that are together considered the most important, and enjoyed items of historic street furniture in Melbourne. They are widely regarded as an essential part of the character of Melbourne as a 'tram city', and important historic elements of the tram

system. They have provided shelter to many commuters over the years, and provided delight to the thousands of passers-by. *Criterion G*



Existing designation: National Trust B7050

7.4.15 Melbourne and Metropolitan Tramway Board Office



What is significant?

The Melbourne and Metropolitan Tramway Board Office is located at 616 Little Collins Street Melbourne (at the rear of the former MT&OC building in Bourke St.).

The MMTB, who owned the adjacent MTOC buildings at 669-677 Bourke Street as a result of their takeover of the cable trams, acquired the block at the rear in 1924. This was previously occupied by two double storey brick buildings, a merchant, L. Donnellan and a motor garage and yard along Godfrey Street. The Board set about extending its headquarters, with the building completed in stages between 1938 and early 1939, to a design of its own architect A G Monsborough.²⁶⁹

The striking six storey building is a combination of styles with a main facade facing Little Collins Street and arranged in three palazzo along Godfrey Street. It has elements of Moderne, stripped classical and art deco architecture. The facades are each divided into three bays with the entrance in the centre bay framed by brown marble faux Doric columns on either side of a recessed lobby doorway with rectangle surround in marble veneer with subtle cornice emblazoned with the words “Melbourne Metropolitan Tramways Board” in a gilded font. Each central bay extends vertically with piers and spandrels and the Little Collins facade culminates in a flagpole spire and setbacks roof profile.²⁷⁰

Despite lack of heritage protection in 2010 it was adaptively reused with few exterior modifications and converted for residential use, strata titled and promoted under the name of “Grand City Apartments”.

The building forms a well preserved interwar and Victorian streetscape with neighbouring buildings including the Savoy Hotel on Spencer Street, the MTOC and former Mail Exchange which terminates the vista along Godfrey laneway. Similarity in style can be seen with the old SEC headquarters on Flinders Street which has also been converted to residential strata title.

²⁶⁹ Butler, Graeme, 1984, Central Activities District Conservation Study, 85, p. 227, City of Melbourne

²⁷⁰ Melbourne Buildings: <http://melbournebuildings.com/former-melbourne-metropolitan-tramways-board-building-616-little-collins-street-melbourne/>

How is it significant?

The Melbourne and Metropolitan Tramway Board Office is of historical, social, and aesthetic significance to the State of Victoria.

Why is it significant?

The Melbourne and Metropolitan Tramway Board Office is of historical significance as the purpose-built headquarters of the Melbourne and Metropolitan Tramways Board at the time of its greatest growth and influence. By the 1930s Melbourne had become one of the largest cities in the southern hemisphere, and its electric tram system was one of the largest in the world. The administration of this system required a substantial bureaucracy and management. The new building was designed to show off the modernity and forward thinking of the Tramways Board and reflected the attitude that electric trams were still a modern and technologically advanced form of public transport. *Criterion A*

The building is also of significance for its association with the notable MMTB architect A. G. Monsborough, who was also responsible for most of the tramway designs from the formation of the board until his retirement in the 1950s. *Criterion H*

The building is of aesthetic significance for the finely detailed and designed architectural featurism with elements of Moderne, stripped classical and art deco style. Its details such as the flanking Doric, marble veneer with subtle cornice recall the sophistication of the period, while the prominent lettering for the “Melbourne Metropolitan Tramways Board” in gilded font demonstrates the self appreciated status of the Board at the time. *Criterion E*

The building is of social significance for the recollections shared by countless tramway employees who either worked here directly or considered the building the centre of the universe, or at least the ivory tower where their overlords sat.²⁷¹ *Criterion G*

Existing designation: graded C by the Melbourne City Council in the Central Activities District Conservation Study by Graeme Butler in 1984 although it was curiously also tagged with the status “not worthy of retention”.

²⁷¹ Pers. Com. Roberto D’Andrea

7.4.16 P&MTT electricity substation



What is significant?

The P&MTT electricity substation is located at 6-8 Rusden Street Elsternwick. It was constructed by the MMTB in 1914 probably to the design of the Trust's architect, Leonard John Flannagan. The building comprises a red brick and stuccoed former power house with two glazed roof lanterns and parapeted walls with extended piers and horizontal and curved bays in the Edwardian manner. "P&MTT" is spelled out in cast cement across a central parapet. The windows are large timber-framed and the openings for movement of plant are intact.

The Prahran and Malvern Tramways Trust purchased land measuring 60' x 77' on the north side of Rusden Street, between Point Nepean Road and Ross Street in 1914 from Charles Kay of Northcote.

Leonard John Flannagan had acted in the capacity of chief architect for the Trust from 1908. The Trust's line from Hawthorn Road to Brighton Road via Glenhuntly Road was opened on 13.11.1913 with power provided, presumably from the Coldblo Road sub-station off Glenferrie Road. The Rusden Street sub-station was switched in on 17 December 1914. It was equipped with a battery, an automatic reversible booster and two 100kw generators relocated from Coldblo Road. It was probably designed by Flannagan. Ownership of the sub-station passed to the MMTB in 1920.²⁷²

How is it significant?

The P&MTT electricity substation is of historical, aesthetic and technological significance to the State of Victoria.

Why is it significant?

The P&MTT electricity substation is of historical significance for its association with the former Prahran and Malvern Tramways Trust, the largest and most successful public transport undertaking of its kind, demonstrating an aspect of the expansion of the system prior to the

²⁷² Glen Eira - Caulfield Conservation Study, Andrew Ward, Architectural Historian, 1994; citing - Caulfield City Council Rate Books 1913-15, 1927-28; MMBW Plan No. 83, 1904; Duckett, P.W., "Prahran and District Tramways in ARHS Bulletin, April, 1945, No. 90, pp. 51-52, No. 91, pp. 62-63.

MMTB takeover of 1920. Although comparable with other structures of its type, it is the only freestanding sub station to have been built by the P&MTT. *Criterion A*

The building is of architectural significance for its more refined Edwardian features, not commonly applied to a utilitarian industrial building in the period. The design still provides a readily recognisable form as a tramway substation in a predominantly residential area. *Criterion E*

The substation is of technical significance as evidence of the form and scale of building required to house the substantial rectification and switching equipment required for powering the tramway system. The rectifiers of rotary converter type, took up far more space than the mercury arc rectifiers introduced in the 1930s and many times greater than the modern solid state rectification equipment now used. As such the building helps understand the rapidly evolving technology employed in electric traction in the early 20th century. *Criterion F*

The building is also of significance for its association with the notable architect Leonard John Flannagan, who was also responsible for most of the tramway designs for both the MPMTT and Hawthorn Tramway Trust. *Criterion H*



Existing designation: HO HO58

7.4.17 MMTB electricity substation, 53 Maribyrnong Road, Ascot Vale.



What is significant?

The MMTB electricity substation is located at Maribyrnong Road Ascot Vale adjacent to the Essendon Railway line. It was constructed by the MMTB in 1925 for the expansion of the former privately operated Essendon and Maribyrnong tramway company lines when they were combined with the metropolitan system. The building is a stripped utilitarian neo-classical design in red brick on brick and concrete footings with cement render details and concrete lintels and steel window frames.

A single entry level storey sits below an equipment room divided at its upper level by a switch platform. A projecting cable tower one bay square has disused cable insulators marking the original power connection (now evidently underground). The main roof is topped by three large square ridge ventilators. The main internal space is then lit from behind and above by three square clerestory windows.

How is it significant?

The MMTB electricity substation is of historical, aesthetic and technological significance to the State of Victoria.

Why is it significant?

The MMTB electricity substation is of historical significance as one of a number of substations created for the expansion and amalgamation of the former municipal-run tramway trusts under the MMTB. The building is significant for its demonstration of the scale and quality of works undertaken by the MMTB, and as evidence of the process of integrating the various electric tramway systems and the former cable tram system into an integrated electric tramway network.

Criterion A

The substation is of technical significance as evidence of the form and scale of building required to house the substantial rectification and switching equipment required for powering the tramway system. The rectifiers for British Thomson-Houston type rotary converters, which took up far more space than the mercury arc rectifiers introduced in the 1930s and many times greater than the modern solid state rectification equipment now used. As such the building helps

understand the rapidly evolving technology employed in electric traction in the early 20th century. *Criterion F*

The North Melbourne and Essendon tramway operated on a different voltage, necessitating a complete overhaul and upgrading of the power distribution and overhead systems when the MMTB took over.

It is of aesthetic significance for the unusual and stylish rendition of what is fundamentally a utilitarian building. It reflects the concerns of the MMTB for creating a lasting civic benefit from its facilities, which included ensuring the structures that it erected were harmonious with their surroundings, despite the industrial nature of their required function. *Criterion E*



Existing designation:

7.4.18 MMTB electricity substation 2 Daly Street South Yarra



What is significant?

The MMTB electricity substation is located at 2 Daly Street South Yarra. It was constructed by the MMTB in 1927 probably to the design of MMTB architect A G. Monsborough. It is currently occupied by the dress shop Le Louvre. Originally known as Tramway Street in reference to the adjacent MT&OC cable tram engine house and car shed, it was originally the site of a group of tiny houses built by a speculator named Alcock, later sold to a real estate agent called Daly, and the street acquired the name of Daly Town. In 1910, just twenty five years after they were built, the houses were condemned and the tenants forced to leave and the houses demolished. The substation was erected as one of a number erected in the mid 1920s as each section of cable tram route was electrified,, including Queensberry Street, South Carlton, Station Street Camberwell, Clarke St South Melbourne and Young Street Fitzroy.

How is it significant?

The Daly Street MMTB electricity substation is of historical, aesthetic and technological significance to the State of Victoria.

Why is it significant?

The Daly Street substation is of historical significance as one of a number of substations created for the expansion and amalgamation of the former municipal-run tramway trusts under the MMTB. The building is significant for its demonstration of the scale and quality of works undertaken by the MMTB, and as evidence of the process of conversion of the cable tram system into an integrated electric tramway network. The south Yarra cable tram engine house and car barn are located immediately adjacent and provide the direct link between this change in technology and operation system in Melbourne's tramways. *Criterion A*

The building is also significant for its association with the prominent architect of the MMTB, A G Monsborough, who also designed the Wattle Park Chalet and many other MMTB buildings. Daly St was possibly the first substation he completed following his appointment as architect to the MMTB in 1926.²⁷³ *Criterion H*

²⁷³ Bryce Raworth Pty Ltd, undated report, '2 Daly Street, South Yarra'

The substation is of technical significance as evidence of the form and scale of building required to house the substantial rectification and switching equipment required for powering the tramway system. The rectifiers for British Thomson-Houston type rotary converters, which took up far more space than the mercury arc rectifiers introduced in the 1930s and many times greater than the modern solid state rectification equipment now used. As such the building helps understand the rapidly evolving technology employed in electric traction in the early 20th century.²⁷⁴ *Criterion F*

It is of aesthetic significance for the unusual and stylish rendition of what is fundamentally a utilitarian building. It reflects the concerns of the MMTB for creating a lasting civic benefit from its facilities, which included ensuring the structures that it erected were harmonious with their surroundings, despite the industrial nature of their required function. *Criterion E*

The building was converted to the Le Louvre store in 2009, with an interior of glass and chrome.

Existing designation: proposed heritage overlay in Prahran Heritage Review

²⁷⁴ Context Pty Ltd. Prahran Heritage Review 1993.

7.4.19 MMTB electricity substation 24 Station Street Camberwell.



What is significant?

The MMTB electricity Substation is located at 30 Station Street, Camberwell. It was constructed by the MMTB in 1925 as one of a series of substations required as part of converting the former cable tram network to electric traction. The building was designed to house rotary converters and switching gear to power the lines through Camberwell to Burwood. The building is similar to a number of contemporary substations in the massing and materials, but each varies in details. In this case, the load-bearing red brick walls are stiffened with integral piers. There are three square clerestory windows on the side elevations and cement-rendered dressing to the gables, capped by a roof clad in corrugated galvanised iron and supported on a paired Fink truss of angled steel.

The three-bay gabled composition is asymmetric, with variously sized and finished windows and openings and jaunty curved rain-guards over the service and pedestrian doors. The steel-framed windows were common in industrial and utility buildings by the time this substation was built. The building is now disconnected from its overhead feeder lines. It is not clear if the original rotary converters remain inside.

How is it significant?

The MMTB electricity Substation is of historical, aesthetic and technological significance to the State of Victoria.

Why is it significant?

The MMTB electricity substation is of historical significance as one of a number of substations created for the expansion and amalgamation of the former municipal-run tramway trusts under the MMTB. The building is significant for its demonstration of the scale and quality of works undertaken by the MMTB, and as evidence of the process of conversion of the cable tram system into an integrated electric tramway network. It demonstrates the expansion of the electric tram system to directly link the former Hawthorn Tramway Trust lines with the city, and further extend them, which was an event of major importance to the history of the area, impacting on the growth and accessibility of the expanding suburbs to the east.²⁷⁵ *Criterion A*

²⁷⁵ R Elphinstone, Camberwell Junction Heritage Study, 1991; additional research by Lovell Chen, Camberwell Heritage Study 2008. Lovell Chen, Camberwell Junction Heritage Review 2008.

The substation is of technical significance as evidence of the form and scale of building required to house the substantial rectification and switching equipment required for powering the tramway system. It is as a rare surviving example as one of the two earliest rotary converter substations in the Melbourne metropolitan area. The rectifiers were of British Thomson-Houston type rotary converters, which took up far more space than the mercury arc rectifiers introduced in the 1930s and many times greater than the modern solid state rectification equipment now used. As such the building helps understand the rapidly evolving technology employed in electric traction in the early 20th century. *Criterion F*

It is of aesthetic significance for the unusual and stylish architectural treatment in the manner of its massing and form with Baroque Revival touches, of what is fundamentally a utilitarian building. It therefore reflects the concerns of the MMTB for creating a lasting civic benefit from its facilities, which included ensuring the structures that it erected were harmonious with their surroundings, despite the industrial nature of their required function. *Criterion E*

Existing designation: proposed heritage overlay in Camberwell Heritage Study

7.4.20 MMTB electricity substation 214 Queensberry Street Carlton



What is significant?

The MMTB electricity substation is located at Bouverie & Queensberry Streets. It was constructed by the MMTB in 1925 as one of a series of substations required as part of converting the former cable tram network to electric traction. It is a tall red brick building with cement details and steel framed windows of three levels with small basement windows to Bouverie Street and large arched window facing Queensbury Street above the main timber entrance doors.

How is it significant?

The MMTB electricity substation is of historical, aesthetic and technological significance to the State of Victoria.

Why is it significant?

The MMTB electricity substation is of historical significance as one of a number of substations created for the expansion and amalgamation of the former municipal-run tramway trusts under the MMTB. The building is significant for its demonstration of the scale and quality of works undertaken by the MMTB, and as evidence of the process of conversion of the cable tram system into an integrated electric tramway network *Criterion A*

The substation is of technical significance as evidence of the form and scale of building required to house the substantial rectification and switching equipment required for powering the tramway system. The rectifiers were of British Thomson-Houston type rotary converters, which took up far more space than the mercury arc rectifiers introduced in the 1930s and many times greater than the modern solid state rectification equipment now used. As such the building helps understand the rapidly evolving technology employed in electric traction in the early 20th century. *Criterion F*

It is of aesthetic significance for the unusual and stylish rendition of what is fundamentally a utilitarian building. It reflects the concerns of the MMTB for creating a lasting civic benefit from its facilities, which included ensuring the structures that it erected were harmonious with their surroundings, despite the industrial nature of their required function. *Criterion E*



Existing designation: possibly previously nominated to VHR

7.4.21 Maribyrnong MMTB tram substation



What is significant?

The Maribyrnong MMTB tram substation is located at Maribyrnong. It was constructed by the MMTB in 1943 as part of the extension of the Footscray and Maribyrnong tram routes specifically to enable the thousands of munitions and armaments workers to get to the massively expanded Commonwealth defence factories.

How is it significant?

The Maribyrnong MMTB tram substation is of historical, social, architectural, aesthetic and technological significance to the State of Victoria.

Why is it significant?

The Maribyrnong MMTB tram substation is of historical significance for its association with the expansion and extension of tram services at the height of the second World War, as a means of serving workers at the Commonwealth defence factories, including the Explosives Factory Maribyrnong, Ammunition Factory Footscray and Ordnance Factory Footscray. New lines were laid on dedicated reserves between Gordon Street and Maribyrnong Road, and services inaugurated to connect with Footscray and Essendon railway stations. *Criterion A*

The building is of technical significance for its rare survival of the only remaining BTH rotary converter rectifier. *Criterion F*

Existing designation: believed to have previously been nominated for VHR as part of Maribyrnong explosives factory

7.4.22 Objects and Collections Significance Assessment

The collections of objects, photographs, historic artefacts and archival documents related to the history of Melbourne's tramways are widely dispersed and curated at variable standards. The primary collections are held by private or community based organisations including the Tramway Museum Society of Victoria, the Malvern Tramway Museum and at Haddon, Bendigo and Ballarat. Some items are retained by the state Government under VicTrack ownership and either held at the Hawthorn Depot or on loan to other organisations. However, the status of many collections items is uncertain, and there is no thorough inventory or catalogue available. In some instances, little distinction has been made between original, well provenance items of potential high significance, and unprovenanced items or reproductions.

The largest quantity of material is held at the Malvern Tramway Museum, and despite a conservation assessment of some of this material having been commenced, the collection is poorly curated and inadequately stored, with the building in a poor structural state and lacking environmental controls.

Items in public collections such as the Melbourne Museum, Public Records office and University of Melbourne Archives are better curated, but tend to be fewer in total numbers. However, despite the difficulties in current curation arrangements, the surviving historical collections are of high importance for understanding and appreciating the history of Melbourne's Tramways.

The collection of tramway memorabilia, objects and archives, held at both the Malvern Tramway Museum and Melbourne Tram Museum@Hawthorn are potentially of State significance for their historical association with the creation, development operation and history of Melbourne's tramways and also of potential aesthetic significance for the skill, craftsmanship and artistry employed in the creation of some items, such a decorative works, uniform, presentations, etc.

However, a determination of significance depends on establishing the provenance, condition and association of the items, and distinguishing between the contributory significant objects and other common material, copies and facsimiles or material not association with significant aspects of the Melbourne tramway system. Some items may also be significant for other associations.



Figure 140: MMTB ticket machine from Melbourne Museum collection.

8.0 RECOMMENDATIONS

8.1.1 List of priority places/objects to be added to VHR

There are presently a number of tram related places included on the Victorian Heritage Register and local planning scheme heritage overlays. These are listed in detail in the accompanying inventory.

The major gaps in the protection of Melbourne's Tramway Heritage are in two main areas; the recognition of the cable tramways as a system, and the reflection of this in a group of conserved buildings and features which can represent the former extent, and therefore significance of the system; and the recognition of the range of places related to the integration and expansion of the electric tramways under the MMBW in the period from the 1920s and 30s. In addition there are some gaps in the smaller tramway entities, such as conservation of the last remnants of the Victorian Railways tram system. With this in mind, the following places and objects are recommended to be added to the Victorian Heritage Register.

The Melbourne Cable Tram system of the MT&OC was the largest single operator cable tram network in the world and the surviving components demonstrate the significance whole network by dint of the survival of sufficient buildings and structures to show the nature and extent of the system, the structure of the various lines, and the means of operation, as much as the specific history and technology of any individual engine house. Therefore it is proposed that a system or group registration of the network encompassing all surviving buildings, structures and features be submitted to the Victorian Heritage Register. The group registration would encompass the places currently listed on the VHR, as well as any remnants of tracks as identified on the VHI, along with new registrations for the following places.

Cable Tram places

- South Yarra Cable Tram Engine House and car shed Toorak Road and 625 Chapel Street South Yarra. 1887
- Brunswick Road Cable Tram Engine House and substation, 253-263 Brunswick Road, Brunswick, 1888
- Windsor Cable Tram Engine House, 105 Wellington Street St. Kilda, 1891
- South Melbourne Cable Tram Car Shed and office, 176-178 Victoria Avenue, Albert Park, 1890-1918
- Brighton Road Cable Tram Car Shed and office, 16 Brighton Rd & 2 Brunning Street Balaclava, 1888 – 1918
- Clifton Hill Cable Tram Car Shed office, 480-484 Queens Parade & 266-284 McKean Street , Fitzroy North, 1887

Electric tram places

At its peak, in the mid twentieth century, Melbourne's tramway, under the MMTB was one of the largest road-based fixed rail transport systems in the world and a critical historical and economic driver of Melbourne's growth. The period of the post MMTB takeover is not well represented by places recognised in heritage identification and protection. Therefore it is proposed that representative buildings structures and places be added to the VHR that reflect the significance of the mid to late twentieth century integration and expansion of Melbourne's electric tramway system as follows.

- Sandringham VR Tram Depot, Station Street & Bay Road (railway yard) Sandringham, 1919
- Brunswick MMTB Tram Depot, Sydney Road Moreland, 1936
- Kew MMTB Tram Depot, tram shed and shops, cnr Barkers Road & High Street Kew, 1915
- Camberwell MMTB Tram Depot, 160-170 Camberwell Road, administration office 8 Council Street Hawthorn East-Camberwell, 1925
- Melbourne and Metropolitan Tramway Board Offices, 616 Little Collins Street Melbourne 1937-8
- Hawthorn Tramway Trust shelter, Riversdale Road, outside Camberwell Tram Depot, East Hawthorn
- Hawthorn Tramway Trust shelter, Riversdale Road, S.E. cnr Highfield Street, Camberwell
- Hawthorn Tramway Trust shelter, Camberwell Road, Fordham Gardens, Camberwell
- Hawthorn Tramway Trust shelter, Camberwell Road, S.W. cnr. Bowen Street, Camberwell City of Boroondara
- Green Point tram shelter, Esplanade Brighton
- Tram Shelter, St. Kilda Rd & Commercial Rd. NE corner Melbourne (note 2001 reconstruction of 1915 original following demolition by truck)
- St Vincent Plaza Tram Shelter, Victoria Parade, cnr Brunswick St (St Vincent Plaza), Melbourne 1936
- P&MTT Substation, 4-6 Rusden Street, Elsternwick 1914
- MMTB Substation, Maribyrnong Road Ascot Vale, 1925
- MMTB Substation, 30 Station Street, Camberwell 1925
- MMTB Substation, cnr Queensbury & Bouverie Streets, Carlton 1925

- MMTB Substation, cnr Brunswick Rd and Black St., Brunswick, in part of former cable tram engine house), 1925
- MMTB Substation, 2 Daly Street, South Yarra, 1927

Rolling stock

The following Tram rolling stock, collections and moveable objects are should be added to the Victorian Heritage Register. It would be appropriate the Melbourne trams within the heritage fleet at Hawthorn Depot to be included on the Victorian Heritage Register as a group or collection registration.

Cable Trams

- MT&OC No 1, Single truck cable tram dummy car, 1885. John Stephenson & Co., New York, Museum Victoria – donated to science museum 1940
- MT&OC No. 28 Single truck cable tram dummy car, TMSV Bylands, on loan to Melbourne Tram Museum @ Hawthorn Depot.
- MT&OC No. 436, Single truck cable tram dummy car, TMSV Bylands, privately preserved by Mr A. E. Twentymen.
- MT&OC No. 256, Single truck cable tram trailer saloon car, TMSV Bylands
- MT&OC No. 290, Single truck cable tram trailer saloon car standard eight window TMSV Bylands

Electric Trams

- VR 20, 4 wheel cross-bench, 1913 Pengelley and Co. SA, St Kilda to Brighton Beach tramway, VicTrack.
- VR 34, Bogie drop-centre, VR Newport Workshops, 1918, TMSV Bylands – restored using trucks from L102
- VR 41, Bogie drop-centre, VR Newport Workshops, 1923, Melbourne Tramcar Preservation Association, Haddon
- VR 52, Bogie drop-centre, VR Newport Workshops, 1942 (VR) 1975 TMSV Bylands
- PMTT 84
- PMTT 16
- PMTT 35
- PMTT 46
- P&MTT 36
- HTT 1

- HTT 8
- HTT 16
- MMTB L 104
- MMTB W 220
- MMTB W 380
- MMTB W1 431
- MMTB Z1 108

Painted Trams

- W2 504 Clifton Pugh
- W 384 Howard Arkley
- W 243, Mirka Mora

Models

- Melbourne Tram and Omnibus Co Models
- Tram model in State Library Victoria Collection

8.1.2 Places to add to heritage overlays

The following structures, buildings and works identified in the accompanying plans are recommended for inclusion on the Heritage Overlay of the stated municipal planning schemes

- Cable Tram Engine House – Richmond (Part Demolished), 1 Bridge Road Cnr Hoddle St., Richmond, 1885 (City of Yarra Planning Scheme)
- Former South Yarra Cable Tram Engine House, 241-257 Toorak Road, and Car Shed 625 Chapel Street South Yarra, 1887-8 (City of Stonnington Planning Scheme)
- Johnston Street Cable Tram Engine House, 95-103 Johnston Street & 56 Argyle Street , Fitzroy, 1887 (City of Yarra Planning Scheme)
- Former South Melbourne Cable Tram Engine House, 357-361 City Road, South Melbourne, 1890 (City of Port Phillip Planning Scheme)
- Former Clifton Hill Cable Tram Car Shed office, 480-484 Queens Parade & 266-284 McKean Street, Fitzroy North, 1887 (City of Yarra Planning Scheme)
- Former Brighton Road Cable Tram Car Shed (altered) and office MT&OC, 16 Brighton Rd & 2 Brunning Street, Balaclava, 1888 – 1918 (City of Port Phillip Planning Scheme)

- Former South Melbourne Cable Tram Car Shed (demolished) and office MT&OC, 176-178 Victoria Avenue, Albert Park, 1890-1918 (City of Port Phillip Planning Scheme)
- Former North Melbourne Cable Tram Car Shed, 8-14 Howard Street, North Melbourne, 1918 (City of Melbourne Planning Scheme)
- Former Nicholson Street Cable Tram Car Shed and Workshop, 734-768 Nicholson Street & 9 Scotchmer Street, Fitzroy North, 1888? Car workshop 1955 tram and bus depot (City of Yarra Planning Scheme) (City of Yarra Planning Scheme)
- Kew MMTB Depot tram shed and shops, Barkers Road, Kew, 1915 (City of Boroondara Planning Scheme)
- Camberwell MMTB Depot tram shed and substation (demolished), 160-170 Camberwell Road administration office 8 Council Street, Hawthorn East / Camberwell, 1925 (City of Boroondara Planning Scheme)
- Tram Shelter, St. Kilda Rd & Commercial Rd. NE corner, Melbourne, 1915 – reconstructed 2001 (City of Melbourne Planning Scheme)
- St Vincent Plaza Tram Shelter, Victoria Parade, cnr Brunswick St (St Vincent Plaza), Melbourne (City of Melbourne Planning Scheme)
- Domain Interchange, St Kilda Road, Melbourne, 1970s (City of Melbourne Planning Scheme)
- Tram Shelter, Riversdale Road, outside Camberwell Tram Depot, East Hawthorn/Camberwell, 1917 (City of Boroondara Planning Scheme)
- Tram Shelter, Riversdale Road, S.E. cnr Highfield Street, Camberwell, 1917 (City of Boroondara Planning Scheme)
- Tram Shelter, Camberwell Road, Fordham Gardens, Camberwell, Camberwell, 1917 (City of Boroondara Planning Scheme)
- Tram Shelter, Camberwell Road, S.W. cnr Bowen Street, Camberwell City of Boroondara, Camberwell, 1917 (City of Boroondara Planning Scheme)
- Tram Shelter, The Esplanade (originally at Park Street then opposite Norwood Avenue), now Green Point gardens, Brighton, built 1906 moved to Brighton gardens 1909 (City of Bayside Planning Scheme)
- Tram Shelter, The Esplanade Beach Road (near Kinane St), Brighton, 1906 (City of Bayside Planning Scheme)
- Tram Shelter, The Esplanade (opposite Dendy Street), Brighton 1906 Remnant of St Kilda Brighton tramway HO
- Bayside Heritage Review, Building Citations p.947 HO166Local
- P&MTT electricity Substation, 4-6 Rusden Street, Elsternwick, 1914 (City of Glen Eira Planning Scheme)

- MMTB electricity Substation, Maribyrnong Road Ascot Vale, 1925 (City of Moonee Valley Planning Scheme)
- MMTB electricity Substation, 30 Station Street, Camberwell, 1925 (City of Melbourne Planning Scheme)
- MMTB electricity Substation, Bouverie & Queensberry Streets, Carlton, 1925 (City of Yarra Planning Scheme)
- MMTB electricity Substation, 2 Daly Street, South Yarra, 1927 (City of Stonnington Planning Scheme)
- Holden St. Substation, 2 Holden Street, North Fitzroy, 1931 (City of Yarra Planning Scheme)
- MMTB Substation, Queens Parade, Clifton Hill, 1955 (City of Yarra Planning Scheme)
- High Street rail over bridge, High Street, Clifton Hill, 1924 (City of Yarra Planning Scheme)
- Zoo line rail over tram bridge, Off Poplar Ave, Parkville, (City of Melbourne Planning Scheme)
- Melbourne and Metropolitan Tramway Board Offices, 616 Little Collins Street (at rear of former MT&OC building Bourke St.), Melbourne, 1937 (City of Melbourne Planning Scheme)

8.1.3 Further studies

Further studies and other activities to advocate, enhance and protect tram heritage.

There should be no further demolition of Cable tram engine houses or remaining car barns or surviving components.

Archaeological assessment of any works likely to effect sites of demolished engine houses and cable runs (as per existing HV inventory places) in particular the cable sheathes at Victoria Parade and Brunswick Street.

An assessment and inventory of surviving W Class Trams in the form of a Conservation Management Plan, should be prepared identifying the status, history and condition of each tram, and evidence of originality, modifications, replacement of fittings and running gear etc. to help guide future decisions on what might or should be kept, whether operating or not. At the moment they are giving away W's that are not at Newport (i.e. the repainted but not upgraded 'ready reserve' fleet at Preston), and have supposedly not touched anything at Newport, though I believe some parts have been 'harvested'. All this on the assumption that 'there are plenty to go round', and perhaps there are, but who knows for sure - it is all decided by enthusiasts or bureaucrats at the moment.

8.1.4 Collection management

The varied collections of objects, photographs and archives relating to Melbourne's Tramways require urgent action to secure and conserve. An initial inventory should be made, commencing with material at the Malvern Tramway Museum and Hawthorn Depot, with specific regard to determining provenance and ownership, and identifying urgent storage and conservation requirements such as providing environmental controls for significant objects and paper records.

A move to a formally managed Melbourne Tramway Museum collection should be made, whether this is consolidated at the Malvern Tramway Museum (with the necessary repairs and improvements to the building) or housed elsewhere, such as at the Hawthorn Depot. Arrangements for exchange or loan of significant items held in other collections should be considered as part of this approach so that a comprehensive and representative collection can be assembled, which can interpret and present the significance of Melbourne's tramway heritage.

BIBLIOGRAPHY

'Back to days when trams stood still', *The Age*, January 16 2010

'Harnessing The Great Lake'. *The Mercury* (Hobart) Saturday 10 September 1910 p.8

'Historic tram ruined during arson attack'. <http://www.railpage.com.au/f-p255235.htm>; Wattle Park Trams Back on Track Burwood Bulletin No. 107 (Summer 2007-8)

'Horses' *Encyclopedia of Melbourne* 2005 Cambridge University Press.

'I Prefer A Tram Conductor', organisation web site <http://www.kitezh.com/trams/>, viewed 12.11.2010.

'Melbourne's Tram History <http://www.railpage.org.au/tram/c.html>

Aldous, Grant, 1988, *The Stopover that Stayed A History of Essendon*. Essendon Bicentennial Community Committee.

Allsop Richard Victoria's public transport, Assessing the results of privatisation Institute of Public Affairs *IPA Backgrounder*, April 2007, Vol. 19/1

Andrews, John, Geoff Lacey, Patrick Moriarty, 1981, *Hold the line: costing Melbourne's transport options* / Melbourne: Australian Railways Union,

Aquilina Robert *A Brief History of the Fitzroy and Whittlesea Railway 1889-1959*

Australia ICOMOS 1999, *The Illustrated Burra Charter, The Australia ICOMOS Charter for the Conservation of Places of Cultural Significance* (the Burra Charter), revised edition.

Australian Heritage Commission, Linking a Nation, Chapter 6: Transport and Making Cities, 1850-70, <http://www.environment.gov.au/heritage/ahc/publications/commission/books/linking-a-nation/chapter-6.html#electric-tramcar>,

Baker, Ray Stannard (June 1903). "Peter Cooper Hewitt - Inventor; Three Great Achievements In Electrical Science". McClure's Magazine XXI: 172-178.
<http://books.google.com/?id=ZbYbHQiLtRYC&pg=RA1-PA172>.

Baker, Ray Stannard (June 1903). "Peter Cooper Hewitt - Inventor; Three Great Achievements In Electrical Science". McClure's Magazine XXI: 172-178.
<http://books.google.com/?id=ZbYbHQiLtRYC&pg=RA1-PA172>.

Ballarat Tramway Museum Inc. "Ballarat's Tramway History", <http://www.btm.org.au/ballarathistory.htm>, accessed 28/2/2011

Ballarat Tramway Museum Inc. "Ballarat's Tramway History", Ballarat Tramway Museum Inc. <http://www.btm.org.au/ballarathistory.htm>, accessed 28/2/2011

Ballarat Tramway Museum, Collection Policy 2009, prepared by W Doubleday.
<http://www.btm.org.au/documents/btmcollpol.pdf>

Bate, Weston 'Bent, Sir Thomas (1838 - 1909)', *Australian Dictionary of Biography*, Volume 3, Melbourne University Press, 1969, pp 144-146.

Bendigo Tramways History, <http://www.bendigotramways.com>, accessed 28/2/2011;

Bendigo Tramways web site [Http://www.bendigotramways.com/index.php?option=com_content&view=article&id=46:history&catid=34&Itemid=58](http://www.bendigotramways.com/index.php?option=com_content&view=article&id=46:history&catid=34&Itemid=58)

Bevege, Margaret, 'Women's Struggle to Become Tram Drivers in Melbourne, 1956-75', in Windschuttle, Elizabeth (ed.), *Women, Class and History : Feminist Perspectives on Australia, 1788-1978*, Australian Society for the Study of Labour History, Sydney, 1980, pp. 437-452.

Bevege, Margaret, 'Women's Struggle to Become Tram Drivers in Melbourne, 1956-75', in Windschuttle, Elizabeth (ed.), *Women, Class and History : Feminist Perspectives on Australia, 1788-1978*, Australian Society for the Study of Labour History, Sydney, 1980, pp. 437-452.

Breydon, Graeme, 1970, Feeding & filling: the story of the Prahran & Malvern Tramways Trust *Running Journal*, Tramway Museum Society of Victoria, Tramway Publications Inc, Melbourne.1990

Briggs, Asa, 1987, *Victorian Cities*, Penguin Books, Ringwood, 1987 edition.

Brighton Southern Cross, 5 May, 8 Oct, 20 Oct and 3 Nov 1906, 21 April & 19 June 1909, notes compiled by L.M. Rogers, copy provided by Robert Green

Brimson, Samuel, 1951, *The Tramways of Australia* Sydney: Dreamweaver, 1985.

Brunswick and Coburg Tramways Act 1914 (No.2484)

Bryce Raworth Pty Ltd, undated report, '2 Daly Street, South Yarra'

Budd, D. and Wilson, R. 1998, *Melbourne's Marvellous Trams*. University of New South Wales Press, Sydney

Butler, Graeme, 1984, Central Activities District Conservation Study, City of Melbourne

Butler, Graeme, *City of Northcote Urban Conservation Study, Volume One: Buildings and Structures* 1983

Cannon, M. 1986, *The Land Boomers*, Melbourne University Press, Melbourne.

Cannon, Michael, 1993, *Melbourne After the Gold Rush*, Loch Haven Books, Main Ridge,

Caulfield South Shopping Centre Draft Heritage Guidelines February 2003, City of Glen Eira, see also - Murray, P & Wells, C. *From Sand, Swamp and Heath: A History of Caulfield*, Melbourne 1986

Chandler, Alfred D. Jr., *Scale and Scope: The Dynamics of Industrial Capitalism*, Belknap Press, Cambridge, MA, 1990.

Charles Leski Auctions, Auction Catalogue, Railway Memorabilia, Auction No.316, December 2007, <http://www.leski.com.au/news/20071019/index.php> Auction 263

'Chart 20: Trade Unions - Public Transport', in *Parties to the Award*, 2002
<http://www.atua.org.au/ptta/041.html>

Churchward , Matthew W-Class Trams, <http://www.emelbourne.net.au/biogs/EM01571b.htm>

Clark, H.R. and Keenan D.R. 1985, *Brisbane Tramways – The Last Decade*, Transit Press

Clifton Hill to Northcote and Preston Tram Company Limited correspondence re construction of cable tramway Royal Historical Society of Victoria Library. MS 000007; Box 8/4

- Cole, P. 1996. The Survival of Melbourne's Trams in *The Australian City Future/Past*, The Third Australian Planning History/Urban History Conference Proceedings, December 1996, Melbourne. Ed Dingle, T. p257.
- Context Pty Ltd, 1993, Conservation Review City of Prahran, volume 4, Individual Buildings. City of Prahran.
- Context Pty Ltd, 2009, Stonnington Thematic Environmental History: Update 1 Volume 1: Key findings and recommendations Final March 2009, report for City of Stonnington.
- Cottle, Drew, Angela Keys and Kristie Martin, 1990. "The end of the line: an examination of the 1990 Victorian tram dispute", <http://www.historycooperative.org/proceedings/asslh/cottle.html> History Cooperative's Conference Proceedings University of Western Sydney.
- Cranston, Jack, 1988. *The Melbourne cable trams 1885-1940* Craftsman Publishing
- Cross, N. E., 1971, 'The W2 Story, A short history of the class', Running Journal, Tramway Museum Society of Victoria, June 1971.
- Cross, N. E., Budd, D. and Wilson, R., 1993, *Destination City, (Fifth Edition)*, Melbourne's Electric Trams, Fifth Edition, Transit Australia Publishing, Sydney.
- Cross, N.E. and Henderson, R.G., and Kings, K. 1981, *Destination City, The Electric Tramway Rolling Stock of the Melbourne and Metropolitan Tramways Board*, Fourth Edition, Australian Electric Traction Association, Sydney.
- Cross, Norman Dale Budd (ed), Randall Wilson (ed) 2001 *Destination City - Melbourne's Electric Trams*
- Crowley, V.J. (1915), Report on Proposed Tramway for the Melbourne, Brunswick & Coburg Tramways Conference
- Curlew, D 1991, 'Melbourne Tramways Dispute and Lockout', *Rebel Worker* Vol 10 No 2 (79) March 1991
- Davison, Graeme 'Suburbs and Suburbanisation' *Encyclopedia of Melbourne* online version, <http://www.emelbourne.net.au/biogs/EM01440b.htm>
- Davison, Graeme *The Rise and Fall of Marvellous Melbourne* 1978; Michael Cannon, *The Land Boomers* 1977; Geoffrey Searle *The Rush to be Rich: A History of the Colony of Victoria* 1971;.
- Department of Infrastructure, Victoria, 1996, Transporting Melbourne – A summary for public consultation.
- Department of Transport, "Investing in Transport" Victoria pp. 69. http://210.15.220.118/east_west_report/Investing_in_Transport_East_West-Chapter03.pdf. Retrieved 2010-11-22.
- Dix, H S, Engineer and Manager, P&MTT Quarterly Report to 30/6/11, & 1/7/11.
- Duckett, P.W., "Prahran and District Tramways in *ARHS Bulletin*, April, 1945, No. 90, pp. 51-52, No. 91, pp. 62-63.
- Duxbury, Ken, 1999, 'Making Melbourne's Tramways: Continuity and Change', copy supplied by Robert Green
- Edwards, Cecil 1969, *Brown Power; A Jubilee History of the State Electricity Commission of Victoria*, State Electricity Commission, Melbourne,

- Ellis, A, 2007, 'Archaeological recording: Cable Tram Tracks Abbotsford Street, North Melbourne', report prepared for Heritage Victoria June 2007.
- Elphinstone, R. 1991, Camberwell Junction Heritage Study, City of Camberwell.
- Encyclopaedia of Melbourne, Suburbs and Suburbanisation
<http://www.emelbourne.net.au/biogs/EM01440b.htm>
- Fiddian, Marc, 1993, *Clang Clang Clang : a study of Melbourne's tramways* / Marc Fiddian. Pakenham, Vic: Pakenham Gazette
- Fitzroy City of Yarra Review of Heritage Precincts 2007
- Fitzroy, Northcote and Preston Tramways Act 1915 (No.2592) 3 August 1915; Public Records Office Victoria, Agency VA 2977 Prahran and Malvern Tramways Trust.
- Frew, Iain, (ed) 1983. *Britain's Electric Railways Today*. Published by the Electric Railway Society and Southern Electric Group
- Friends of Hawthorn Tram Depot <http://www.hawthorntramdepot.org.au/papers/P&MTT.htm>
- Friends of Hawthorn Tram Depot, 'The Sir Robert Risson era: an enduring legacy',
<http://www.hawthorntramdepot.org.au/papers/risson.htm>
- Frost, D. 2006, *A short history of the Victorian Railways Trams*, Tramway Publications
- Frost, Lionel, 1991, *The New Urban Frontier: Urbanisation and City Building in Australasia and the American West*, New South Wales University Press. 24-6.
- Gardner, Heather, 1987, *The Parliament of the Suburbs*, Canberra College of Advanced Education, Canberra,
- George, B., Storey, D. and Birch, J., 1997, Timeline history of Melbourne's Government cable and electric trams and buses, Association of Railway Enthusiasts, Melbourne.
- Gilbeau, James, 1992, *The Saint Charles Streetcar – or the history of The New Orleans and Carrollton Railroad*, 3rd edition 1992, Louisiana Landmarks Society
- Glass, Margaret, *Tommy Bent: bent by name, bent by nature*, Melbourne University Press, Carlton, 1993.
- Godden Mackay Logan "Former Rozelle Tram Depot Conservation Management Plan, Sept 2004.
- Grant, Aldous. 1988, *The Stopover that Stayed A History of Essendon*. Essendon Bicentennial Community Committee.
- Green, Robert et al *The Box Hill - Doncaster Electric Tramway* Pamphlet first published by City of Box Hill, 1989 on behalf of the Box Hill - Doncaster Electric Tram Centenary Committee. Reprinted in 1998 by the City of Whitehorse
- Green, Robert, 1975, 'The Fairfield Park Experiment', *Trolley Wire*, February 1975, Vol 16 No 1 Issue 156 pp.3-6.
- Green, Robert, 1989, *Australia's first electric tram*
- Green, Robert, 1989, *The First Electric Road: a History of the Box Hill and Doncaster Tramway*, John Mason Press, East Brighton, Victoria.

- Green, Robert, 1990, Research Report on Melbourne Electric tramway depots, for Heritage Victoria
- Green, Robert, 1991, 'Melbourne's Early Trams', *The Genealogist*, September 1991, pp408-411
- Green, Robert, 1994, 'Trams and Tourism', typescript, copy supplied by the author. pp4-7.
- Green, Robert, 1996, List of Electric Tramway Depots in Australia, compiled by Robert Green c 1996 (copy provided by R Green.)
- Green, Robert, 2008, "As Perfect as Possible - the History of Melbourne's Cable Trams 1885-1940" Institution of Engineers, Australia, Engineering Heritage Branch, Speakers' Program, Thursday, 22 May 2008
- Green, Robert, et al, 1998, *The Box Hill - Doncaster Electric Tramway* Pamphlet first published by City of Box Hill, 1989 on behalf of the Box Hill - Doncaster Electric Tram Centenary Committee. Reprinted in 1998 by the City of Whitehorse
- Grutzner, Catherine M., n.d. 'Tramways Friendly Society Centenary' 1888-1988 A Short history, Tramway Friendly Society Melbourne
- Hansen, WW. 1970, *Archaeology of the Cable Tram*, Southment Books 1970, , reprinted from the Mining and scientific Press 1885
- Harnessing The Great Lake. *The Mercury* (Hobart) Saturday 10 September 1910 p.8
- Harrigan, L. J., 1962, Victorian Railways to '62, Victorian Railways Public Relations and Betterment Board, Melbourne.
- Hawthorn Tramways Trust 1916-19, *Annual Reports*
- Hawthorn Tramways Trust, Public Records Office VA 2978
- Henderson, K., 1988, The Masonic Grand Masters of Australia, Ian Drakeford Publishing, Melbourne.
- Heritage Victoria, 2008, Guidelines for Conducting Historical Archaeological Surveys, Department of Planning and Community Development, Melbourne
- Heritage Victoria, 2010, Victoria's Framework of Historical Themes, Published by the Heritage Council of Victoria, Melbourne, February 2010. Also published at www.heritage.vic.gov.au
- Hone, J. Ann 'Clapp, Francis Boardman (1833 - 1920)', *Australian Dictionary of Biography*, Volume 3, Melbourne University Press, 1969,
- Hone, J.A. 1974 'Luxton, Thomas (1850 - 1911)', *Australian Dictionary of Biography*, Volume 5, Melbourne University Press
- Horse Trams from Cheltenham to Sandringham, Kingston Historical Web Site, <http://localhistory.kingston.vic.gov.au>
- Howard, Bruce collection 1936- Romance of Australian trams photograph collection ca. 1870-1976. National Library Australia .pic-vn4778575
- Howlett A 1972, "The Sorrento Steam Tram" *Running Journal* Vol. 9, No. 4, August 1972
- Howlett, A. 2008, 'Setting the standard: Fire Protection and the P&MTT', *Running Journal*, Tramway Museum Society of Victoria

<http://museumvictoria.com.au/melbournemuseum/whatson/current-exhibitions/melbournestory/favourite-objects/cable-tram-model/>

Hutson, Jack, 1990, 'The Melbourne Cable Trams, 1885-1940: Men of Perception, F. B. Clapp and W.C. [i.e. George William] Duncan', *Recorder* (Australian Society for the Study of Labour History, Melbourne Branch), vol. 165, December, 1990, pp. 2-9. Details

Hylton, Stuart, 2007, *The Grand Experiment: The Birth of the Railway Age 1820-1845*. Ian Allan Publishing.

Johnston, Chris, 2002, "Tram graveyard yields an art treasure" *The Age* June 7 2002

Jones, C., 1993, *Watch for Trams*, Kangaroo Press, New South Wales.

Jones, Russell, 'Penny fare to Pentridge: the Melbourne, Brunswick & Coburg Tramways Trust' Friends of Hawthorn Tram Depot, <http://www.hawthorntramdepot.org.au/papers/mbctt.htm>

Jones, Russell, 2001-3, "Hooves and iron: Melbourne's horse trams". Friends of Hawthorn Tram Depot 2001-3 <http://www.hawthorntramdepot.org.au/papers/horse.htm>, retrieved 11.11.2010.

Jones, Russell, 2001-3, "VR electric street railways", Friends of Hawthorn Tram Depot. 2001-3. <http://www.hawthorntramdepot.org.au/papers/vrtram.htm>

Jones, Russell, 2001-3. "Footscray: genesis of a local tramway" Friends of Hawthorn Tram Depot, Friends of Hawthorn Tram Depot

Jones, Russell, 2001-4. "Northcote: the on again, off again cable tramway", Friends of Hawthorn Tram Depot, <http://www.hawthorntramdepot.org.au/papers/northcote.htm> (

Jones, Russell, 2001-9, "Here comes the rain again: Melbourne tram shelters" Friends of Hawthorn Tram Depot, 2001-9 <http://www.hawthorntramdepot.org.au/papers/tramstops.htm> (viewed 18/5/10)

Jones, Russell, 2003, 'Women in the tramways,' Friends of the Hawthorn Tram Depot, <http://www.hawthorntramdepot.org.au/papers/women.htm>

Jones, Russell, 2006, "A brief history of the North Melbourne Electric Tramway & Lighting Company", Tramways Museum Society of Victoria, <http://www.tmsv.org.au/papers/nmetl.htm>.

Jones, Russell, 2007, 'Keeping time: Bundy clocks in the MMTB', Friends of Hawthorn Tram Depot, <http://www.hawthorntramdepot.org.au/papers/keepingtime.htm>

Jones, Russell, 2008, 'Fares Please: An economic history of the Melbourne & Metropolitan Tramways Board', Friends of Hawthorn Tram Depot, <http://www.hawthorntramdepot.org.au/papers/ecohist/ecohist0.htm>

Jones, Russell, 2008, 'Hector Hercules Bell – ringing in the new', Friends of Hawthorn Tram Depot <http://www.hawthorntramdepot.org.au/papers/bell.htm>

Jones, Russell, 2008, 'Steady as she goes: the Prahran & Malvern Tramways Trust', Friends of Hawthorn Tram Depot <http://www.hawthorntramdepot.org.au/papers/P&MTT.htm>

Jones, Russell, 2008, "James Henry Harvey: a motorman's Gallipoli journey", Friends of Hawthorn Tram Depot.

Jones, Russell, 2009, "Never a paying passenger: the Fitzroy, Northcote & Preston Tramways Trust", Friends of Hawthorn Tram Depot, <http://www.hawthorntramdepot.org.au/papers/fnptt.htm>, 2009.

- Jones. Russel, 2008, 'PMTT tramcar fleet', Friends of Hawthorn Tram Depot, <http://www.hawthorntramdepot.org.au/papers/pmtt-01.htm>
- Keating, John D. 1970, *Mind the Curve!: a history of the cable trams*, Melbourne University Press
- Keating, John D. 'Duncan, George Smith (1852? - 1930)', Australian Dictionary of Biography, Volume 4, Melbourne University Press, 1972, p. 115.
- Keenan, David R. 1985, *Melbourne tramways* Sans Souci, N.S.W. : Transit Press,
- Kings Keith & David Wilson, "Buses of the Melbourne and Metropolitan Tramways Board (MMTB) Part 2 1935 to 1940. *Australian Bus and Commercial Vehicle Heritage*, January/February 2007, pp.10-17.
- Kings, K.S. 1975, Fifty years of Tramway Buses in Melbourne, *Bus and Coach News Sheet*, December 1974, p.3-5, February 1975 pp3-5
- Kings, K.S. 1979, '60 Years of the MMTB', *Trolley Wire*, December 1979 pp12-21, February 1980 pp14-21, April 1980 pp3-13, South Pacific Electric Railway, Sydney
- Kings, K.S. and Richardson, J. 1965, *Destination Eaglehawk*, Traction Publications
- Kings, K.S. Fifty years of Tramway Buses in Melbourne, *Bus and Coach News Sheet*, December 1974, p.3-5, February 1975 pp3-5
- Kings, K.S., 1967, 'Melbourne's All Night Trams', *Running Journal*, Tramway Museum Society of Victoria, Melbourne, April 1967.
- Kings, K.S., 1969, Fifty Years of the MMTB, *Running Journal*, Vol 6 No 3 Tramway Museum Society Of Victoria, Melbourne, Dec 1969.
- Kings, K.S., 1980, 'Sixty Years of the MMTB', *Trolley Wire*, South Pacific Electric Railway, Sydney, Dec 1979.
- Kings, Keith & David Wilson, "Buses of the Melbourne and Metropolitan Tramways Board (MMTB) Part 2 1935 to 1940. *Australian Bus and Commercial Vehicle Heritage*, January/February 2007, pp.10-17.
- Kingston Historical Web Site, 'Horse Trams from Cheltenham to Sandringham, <http://localhistory.kingston.vic.gov.au>
- Lack John F (ed) *Charlie Lovett's Footscray: being the reminiscences of Charles Eldred Lovett first published in the Footscray Mail 1935-36*, Charles Eldred Lovett, 1993
- Lack, John, 1998. History of Footscray, city of Footscray
- Lancelloti, Lucia, & Green, Robert, n.d. "The Fitzroy Cable Tram engine House (And part of the road reserve), 81-89 and part of 93-103 Victoria Parade Fitzroy: the identification of potential Archaeological Remains." Unpublished report Heritage Victoria;
- Land Conservation Council 1973, *Report on the Melbourne Study Area*, Land Conservation Council, Melbourne.
- Lee, Charles E. *The Swansea & Mumbles Railway* Oakwood Press, Oxford, 1988, p.48
- Lemon, Andrew 1983, *The Northcote Side of the River*, City of Northcote in conjunction with Hargreen Publishing Company, North Melbourne
- Lewis, Miles, 1994, *Melbourne: The City's History and Development*, City of Melbourne, Melbourne

- Lovell Chen, Camberwell Heritage Study 2008. Lovell Chen, Camberwell Junction Heritage Review 2008.
- Lovell Chen, Yarra Connections, Nov 2002, Yarra Trams Newsletter.
- Macmeikan, I. 1956, *Melbourne Cable Tramways*, Melbourne & Metropolitan Tramways Board
- Marquis-Kyle, P. and Walker, M. 1992, *The Illustrated Burra Charter: Making Good Decisions about the Care of Important Places*, Australia ICOMOS, Brisbane.
- Marshall-Wood, Leon 1966, *The Brighton electric line* [3rd ed. rev. and enl.]. Canberra : Traction Publications,
- Matthews, H.H. 1941, "The Melbourne Cable Trams" *Australian Railway Historical Society Bulletin*, January 1941
- McCarthy Ken, Melbourne Tramway Centenary The Cable Tramway Era, *Trolley Wire Journal of the Australian Tramway Museums*, October 1985 pp.3-23 & December 1985 pp3-16
- McKinley, Brian, 1979, *A Documentary History of the Australian Labor Movement 1850-1975*,
- McNicoll, R. 1979, 'Catani, Carlo Giorgio Domenico Enrico (1852 - 1918)', *Australian Dictionary of Biography*, Volume 7, Melbourne University Press
- Melbourne & Metropolitan Tramways Board *MMTB News* Vol. 4 No 6 June 1967.
- Melbourne & Metropolitan Tramways Board, "MMBT Plan for General Scheme" (in *Running Journal* Volume 10, Number 1 February 1973)
- Melbourne & Metropolitan Tramways Board, 1920-82, *Annual Reports*
- Melbourne & Metropolitan Tramways Board, 1930, *Melbourne & Metropolitan Tramways Board – Its Progress and Development 1919-1929*
- Melbourne & Metropolitan Tramways Board, letter book no 3 29/8/1924 (Memos signed by the secretary - (probably forwarded to the engineer), transcribed copy provided by Robert Green.
- Melbourne & Metropolitan Tramways Board, *Melbourne and Metropolitan Tramways Board Its Progress and Development 1919-1929*, MMTB, 1929,
- Melbourne & Metropolitan Tramways Board, *Melbourne Tramways, The Development of a Great System MMTB c 1927*. (copy provided by Robert Green)
- Melbourne & Metropolitan Tramways Board, recruitment of staff Extracts from Annual Reports of the MMTB ending 30 June 1951-57, transcriptions provided by Robert Green.
- Melbourne & Metropolitan Tramways Board, Some facts connected with Melbourne Tramways October 1924, Sands & McDougall, (copy provided by Robert Green)
- Melbourne and Metropolitan Tramways Act 1918 (No.2995), Public Records Office Victoria, Agency VA 2971, Melbourne, Brunswick and Coburg Tramways Trust
- Melbourne Brunswick & Coburg Tramway Trust, *Annual Reports* 1914-19
- Melbourne to Burwood Tramways Act, 1915 (No.2) (Act No.2815, 30 December 1915)

Melbourne Tramway and Omnibus Company Limited Public Records Office Agency VA 2976,
<http://www.access.prov.vic.gov.au/public/component/daPublicBaseContainer?component=daViewAgency&entityId=2976> retrieved 1/9/2010

Melbourne Tramways Band - *a short history*. <http://www.melbtramband.org.au/>

Melbourne, Brunswick & Coburg Tramways Trust, 1916-19, *Annual Reports*

Melbourne, Brunswick and Coburg Act, on 26 Oct 1914 amending Act (No.2541)

Menzies, D. "The 1922 Plan - *Running Journal* Volume 10, Number 1 February 1973

Metropolitan Town Planning Commission, 1929, Plan of general development, Melbourne: report of the Metropolitan Town Planning Commission, Melbourne : H.J. Green, Govt. Printer, 1929.

Metropolitan Transit Authority, 1983, *100 years of Melbourne's trams* / Metropolitan Transit Authority, and Australian Tramway and Motor Omnibus Employees Association

Meyers, Stephen L. Manhattan's Lost Streetcars, Arcadia Publishing 2005; Journal of the Stephenson Locomotive Society, Vol. 43, No. 509 (December 1967), p.364

Michell P. The Northcote History Group, Northcote Timeline, compiled by P. Michell and typed by Charles Michell, <http://home.vicnet.net.au/~nhcs/Nhcstimeline.html>

Murray, Kevin "Preston Tram Workshops, Life after Malcolm, Atlantis Found in Preston,"
<http://www.kitezh.com/trams/preston.htm>

Murray, P & Wells, C. *From Sand, Swamp and Heath: A History of Caulfield*, Melbourne 1986

Murray, R. 1971, *Financial Review*, 11 June, p14.

Murray, R. 1993, 'Broadby, Reginald Roslyn (Reg) (1904 - 1956)', *Australian Dictionary of Biography*, Volume 13, Melbourne University Press

O'Neill, S. 1969, 'Coppin, George Selth (1819 - 1906)', *Australian Dictionary of Biography*, Volume 3, Melbourne University Press

Palmer, Steve (15 October 2007). *Blackpool's Trams Past and Present*. Venture Publications Ltd.

Pearsall, R. 1992, *History of the ATMOEA*, Rail, Tram & Bus Union NSW

Pearson, M. and Sullivan, S. 1995, *Looking After Heritage Places*, Melbourne University Press.

Perry, R. 2004, *Monash: The Outsider Who Won A War*, Random House Australia

Powerhouse Museum, Sydney, catalogue, "Horse-drawn omnibus, 1898"
<http://www.powerhousemuseum.com/collection/database/?irn=207261>

Prahran & Malvern Tramways Trust Act, 1910 (No.2294), Act 1907 (No.2130), (conferred on the Councils under the provisions of the Tramways Act, 1890 and 1915.)

Prahran & Malvern Tramways Trust Public Records Office Agency VA 2976,
<http://www.access.prov.vic.gov.au/public/component/daPublicBaseContainer?component=daViewAgency&entityId=2976> retrieved 1/9/2010

Prahran & Malvern Tramways Trust Quarterly report to 30/3/11, 31/12/11, 31/3/12, 30/06/1914
31/12/1915, copy provided by Robert Green.

Prahran & Malvern Tramways Trust, 1895, *Tramway guide to Melbourne and Suburbs*, published by the MT&OCo Ltd 1895.

Prahran & Malvern Tramways Trust, 1910-1919, *Annual Reports*, Prahran Telegraph Printing Company

Prahran & Malvern Tramways Trust, 1915, *Proposed New Tramway Lines*, Prahran Telegraph Printing Company

Prahran Chronicle Sat 6 January 1917.

Prentice, B. and Filgate, P., 1999, *A brief history of the Melbourne, Brunswick and Coburg Tramways Trust*, Tramway Publications Inc, Melbourne.

Prentice, B., 1993, *Tramway by the river*, a brief history of the Hawthorn Tramways Trust, Tramway Publications Inc, Melbourne.

Prentice, R. H. 'A Brief History of the Melbourne, Brunswick and Coburg Tramways Trust' in *Running Journal* July 1966, Tramway Museum Society of Victoria

Prentice, R. H. 'A Brief History of the Melbourne, Brunswick and Coburg Tramways Trust' in *Running Journal* July 1966, Tramway Museum Society of Victoria

Prentice, R. H. 1966, 'A Brief History of the Hawthorn Tramways Trust', *Running Journal* April 1966, Tramway Museum Society of Victoria

Prentice, R. H. 1966, 'A Brief History of the Melbourne, Brunswick and Coburg Tramways Trust', *Running Journal* July 1966, Tramway Museum Society of Victoria

Prentice, R.H. 1999, *A brief history of the Melbourne, Brunswick and Coburg Tramways Trust* original text by Bob Prentice; edited by Dean Filgate. Melbourne, Vic. Tramway Publications Inc,

Priestly, S. 1984, *The Victorians – Making Their Mark*, Fairfax Syme & Weldon Associates

Production company Association of Railway Enthusiast , Producer Rod Cook, Director Peter Henshaw , *Commuting by Cable* (1988). <http://aso.gov.au/titles/documentaries/commuting-cable/> National Film & Sound Archives

PTC drawings, 1279 25 0DI2, 1280 25 0DI4 MMTB Drawing P2213 17.7.1925; MMBW detail Plan 1265 1904.

viewed 11/10/2010

Public Transport Corporaton, drawings, 1279 25 0DI2, 1280 25 0DI4 MMTB Drawing P2213 17.7.1925; MMBW detail Plan 1265 1904.

Report of the Registrar of Friendly Societies for the years ending the 31st December, 1887 and the 31st December 1888. p.4 (copy provided by Robert Green)

Richardson, J. 1963, *The Essendon Tramways*, Traction Publications 2nd ed. Canberra City, A.C.T : Traction Publications; Chicago : O. Davies, distributor, 1963.

Richardson, J. 1967, *Destination Subiaco*, Traction Publications

Richardson, J. and Kings, K.S. 1960 *Destination City* (Second Edition), Traction Publications

Richardson, J., 1963, *The Essendon Tramways, The story of the North Melbourne Electric Tramway and Lighting Company*, Second edition, Traction Publications, Canberra.

- Rickard, J. 1979, 'Bayles, Norman (1865 - 1946)', *Australian Dictionary of Biography*, Volume 7, Melbourne University Press
- Risson, R.J.H. 1966, 'Public Transport in Big Cities' MMTB News September/October 1966, Melbourne & Metropolitan Tramways Board
- Risson, R.J.H., 1968, Public Transport in Big Cities, Special Lectures in Transport, National Transport Policy, The University of Melbourne, Victoria, 1968.
- RMIT Business Working Paper Series - 40 - G. Turnbull, August 2002 Working Paper No. 01/2002.
- RMIT Business Working Paper Series - 41 - G. Turnbull, August 2002 Working Paper No. 01/2002.
- Royal Historical Society of Victoria Library,' Clifton Hill to Northcote and Preston Tram Company Limited' correspondence re construction of cable tramway . MS 000007; Box 8/4
- RTBU. N.d. A Short History of the RTBU. <http://www.rtbu-nat.asn.au/>
- Scott, K. 1999, *Gareth Evans*, Allen & Unwin
- Scott, William F. 2008. *Last tram at eleven: tramways of Ballarat, Bendigo, Geelong*. Clunes, Vic. Full Parallel Productions,
- Scrafton, D. 1974, Summary of Seminar in *Implementation of Melbourne's Metropolitan Transportation Plan Chartered Institute of Transport*, Victorian Section Seminar, Melbourne, October 1974 p84.
- Searle, Geoffrey 1971, *The Rush to be Rich: A History of the Colony of Victoria*
- Serle, Geoffrey. 1986, 'Mackinnon, Donald (1859 - 1932)', *Australian Dictionary of Biography*, Volume 10, Melbourne University Press
- Sheard, H. 1972, 'The Melbourne Tramway & Omnibus Company Limited', *Running Journal* June 1972, Tramway Museum Society of Victoria
- Simpson, Margaret *On the Move: A history of Transport in Australia*, Powerhouse Publishing, Sydney, 2004; R. Atkins, "The Sydney Steam Tram" in "Model Engineer" Vol. 143, 6 May 1977, pp.523-4; City of Sydney Archives. City of Sydney Archives.
- Some facts connected with Melbourne Tramways October 1924, Sands & McDougall, (copy provided by Robert Green)
- Sparks Fly between Harold Sparks and David Abbott , <http://localhistory.kingston.vic.gov.au/htm/article/315.htm>
- Stone Arthur 'The Sandringham Tramway' – *Running Journal*, Volume 6, Number 2, Oct-Nov 1969
- Stonnington Library <http://stonlib.stonnington.vic.gov.au/cgi-bin/spydus.exe/ENQ/PIC/BIBENQ?IRN=6480955&FMT=PA>
- Sullivan, Frank and Fred Winkowski. c1995. *Trams: a guide to the world's classic streetcars* London : Apple Press,
- Surrey Iron Railway 200th - 26th July 2003". Early Railways. Stephenson Locomotive Society. <http://www.stephensonloco.fsbusiness.co.uk/surreyiron.htm>. Retrieved 19 September.
- Swift, William George, *The History of Northcote: from its first settlement to a city*, Northcote, Leader, 1928.

Tarr Joel and Clay McShane, "The Centrality of the Horse to the Nineteenth Century American City," in Raymond Mohl, ed., *The Making of Urban America* (New York: SR Publishers, 1997), pp. 105–30. See also Ralph Turvey, "Work Horses in Victorian London" at www.turvey.demon.co.uk.

Taylor, Michael, 2009?, Former Cable Tram Engine House/Capitol Bakeries conservation analysis /

The Melbourne Tramway and Omnibus Company's Act 1883
http://www.austlii.edu.au/au/legis/vic/hist_act/tmtaoca188344

The Tramways Band, Appearance in South Street Competitions, MMTB Tramway Topics, 7 1948.; 50th anniversary Wattle Park Recital, 14 April 1991 Friends of Wattle Park Newsletter No 8 September 1993 p.6-7. (copies provided by Robert Green)

Thomson, Kathleen 'Cameron, Alexander (1864 - 1940)', *Australian Dictionary of Biography*, Volume 7, Melbourne University Press, 1979, pp 530-531. <http://adbonline.anu.edu.au/biogs/A070534b.htm>

Tram Tracks, March 1949, Traction Publications, Brighton Beach, p5.

Trams Down Under internet message board <http://tdu.to/94420.msg> accessed 1/7/2011.; David Hoadley June 1995. Updated 8-Jan-1996 Trams of Australia <http://www.railpage.org.au/tram/z.html> accessed 1/7/2011

Tramway guide to Melbourne and Suburbs, published by the MT&OCo Ltd 1895.

Tramway Museum Society of Victoria "Geelong tramways - a short history". *Tramway Museum Society of Victoria* <http://web.archive.org/web/20060819124009/http://tmsv.org.au/papers/geelong.htm>. accessed 28/2/11

Tramway Museum Society of Victoria "Geelong tramways - a short history".
<http://web.archive.org/web/20060819124009/http://tmsv.org.au/papers/geelong.htm>. accessed 28/2/11

Tramway Museum Society of Victoria Ltd, *Running Journal*, Vol 9 No 6, December 1972

Tramways Board, Report and Statement of Accounts for the period 28/1/1916-31/6/1917. Appendix 2

Turnbull, G 2002, 'The development and retention of Melbourne's trams and the influence of Sir Robert Risson'. RMIT Transport Research Centre Working Paper No. 01/2002 August 2002.

Turvey, Ralph "Work Horses in Victorian London" at www.turvey.demon.co.uk.

Twentyman, A. E. 1971, 'The Northcote and Preston Cable Tramway', *Running Journal*, October 1971, Tramway Museum Society of Victoria;

Twentyman, A. E. 1973, 'The Zoo Horse Tram', *Running Journal* Volume 10, Number 5 October 1973 Tramway Museum Society of Victoria

Twentyman, A. E. 1975, The Melbourne Cable Tram Network, *Trolley Wire* October 1975, p.13

Twentyman, AE 1978, The Conversion of Melbourne's Cable Tramways, *Trolley Wire*, February 1978, pp.3-12

Van Riemsdijk, J.T. and Brown, K. 1980, *The Pictorial History of Steam Power*, Octopus Books

Vassilopoulos, J. 1997, 'Lessons of the "Free Clarrie O'Shea" campaign', *Green Left Weekly*

Venn, M.A. 1995, A Fair Go for the Streetcar, *The New Electric Railway Journal*, Winter 1995-96, The Congress Research and Education Foundation, Washington DC, p26.

VicSig, <http://www.vicsig.net/index.php?page=trams§ion=heritage&museum=north%20fitzroy>)¹“The Sir Robert Risson era: an enduring legacy”, Friends of Hawthorn Tram Depot, <http://www.hawthorntramdepot.org.au/papers/risson.htm>

Victoria and its Metropolis “The Melbourne Tramways”, 1888 chapter in *Victoria and its Metropolis – Past and Present*, reprinted in Cranston (1988) *The Melbourne Cable Trams 1885-1940*.

Victoria, An act to authorize the Melbourne Tramway and Omnibus Company Limited to construct tramway branches in the cities of Melbourne and Collingwood, and in the borough of St. Kilda, and to amend "The Melbourne Tramway and Omnibus Company's Act 1883" and for other purposes, 12th December, 1884.

Victoria, Legislative Assembly 1951-52, *Victorian Parliamentary Debates*, Vol. 239, p1441.

Victorian Chamber of Manufacturers, Weekly Service Bulletin, Melbourne, Vol. 12, No 13, 17 April 1967.

Victorian Department of Transport. "Investing in Transport" Victorian Department of Transport. pp. 69. http://210.15.220.118/east_west_report/Investing_in_Transport_East_West-Chapter03.pdf. Retrieved 2010-11-22.

Victorian Tram Systems, <http://www.vicsig.net/index.php?page=trams>

Vines G. Flemington Bridge Classification Report, 2004 National Trust of Australia (Victoria).

Waldron, Hugh, Yarra Trams http://www.yarratrams.com.au/desktopdefault.aspx/tabid-159//37_read-116/ *An edited extract from "A Brief Timeline of the History of Tram operation within Victoria"*, November 1999. Compiled by Mr Hugh Waldron, Senior Driver, Malvern Depot.

Ward, Andrew, 1989, *City of Sandringham heritage and Conservation Study*, Andrew C. Ward & Associates, updated, City of Bayside March 1998.

Ward, Andrew, 1994; Glen Eira - *Caulfield Conservation Study*, Architectural Historian

Ward, Andrew, 2000, *City of Darebin Heritage Review*, City of Darebin

Weaver, John C A 2004, Pathology of Insolvents: Melbourne, 1871-1915, Australian Journal of Legal History

Whitehead, Graham J ‘Did You Know? Trams’ Kingston Historical Website, <http://localhistory.kingston.vic.gov.au/htm/article/237.htm>

Wilson David & Keith Kings,. Buses of the Melbourne and Metropolitan Tramways Board (MMTB) the Early Days 1925 to 1934, *Australian Bus and Commercial Vehicle Heritage*, July/August 2006, pp.8-13

Wilson, R.K. 1963, Tramway Topics News Item, *Electric Traction*, Australian Electric Traction Association, Sydney, December 1963 p2.

Wilson, Randall, and Dale Budd, 2003. *The Melbourne Tram Book*, University of New South Wales Press, Sydney, <http://www.emelbourne.net.au/bib/PEM000384.htm>

Winter 1995-96, The Congress Research and Education Foundation, Washington D.C.

Winzenried, A.P. (1984) Tram to Sorrento, APW Productions

Wylie, R.F. The 1861 Pitt Street Tramway and the Contemporary Horse Drawn Railway Proposals *Australian Railway Historical Society Bulletin*, February, 1965

Yarra Trams http://www.yarratrams.com.au/desktopdefault.aspx/tabid-159//37_read-116/ *An edited extract from "A Brief Timeline of the History of Tram operation within Victoria", November 1999. Compiled by Mr Hugh Waldron, Senior Driver, Malvern Depot.*

Public Records Office Victoria

Agency VA 2694- Melbourne and Metropolitan Tramways Board

[Prahran & Malvern Tramways Trust: Agency VA 2977](http://www.access.prov.vic.gov.au/public/component/daPublicBaseContainer?component=daViewAgency&entityId=2977)

<http://www.access.prov.vic.gov.au/public/component/daPublicBaseContainer?component=daViewAgency&entityId=2977>

[Fitzroy, Northcote & Preston Tramways Trust: Agency VA 2972](http://www.access.prov.vic.gov.au/public/component/daPublicBaseContainer?component=daViewAgency&entityId=2972)

<http://www.access.prov.vic.gov.au/public/component/daPublicBaseContainer?component=daViewAgency&entityId=2972>

Guide to holdings, Agency VA 2694 Melbourne and Metropolitan Tramways Board and related agencies.

Series VA 2971 – Melbourne, Brunswick & Coburg Tramways Trust

Series VA 2974 North Melbourne Electric Tramway & Lighting Company

Agency Hawthorn Tramways Trust, VA 2978

<http://www.access.prov.vic.gov.au/public/component/daPublicBaseContainer?component=daViewAgency&entityId=2978#> viewed 11/10/2010

Agency VF 180 Zoos, <http://www.access.prov.vic.gov.au/public/custom/jsp/daPublicBaseContainer.jsp>

Richmond Line Construction Pay Sheet Book [VPRS 7207](#)? 1885 - ? 1886

Index to Tramways Employees Register [VPRS 12737](#) 1885 - ? 1934

Directors' Reports to Shareholders [VPRS 12816](#) 1888 - 1918

Employment History Cards of Tramways and Bus Employees [VPRS 12741](#) Closed 1910 - 1983

Accounting Records : Richmond Line Construction [VPRS 7887](#) 1884 - 1887

Tramways Employees Record Book [VPRS 12738](#) 1885 - 1924

Register of Contracts and Quoted Prices [VPRS 7886](#) 1900 - ? 1922

Employee Record Book : Northern Engine Houses [VPRS 7815](#) 1901 - Circa 1942

Inventory of Assets [VPRS 7820](#) 1916 - ? 1916

Internal Memoranda Book [VPRS 7198](#) By 1885 - ? 1920

Register of Employees' Vacations [VPRS 7888](#) By 1912 – 1916

APPENDIX 1 LIST OF TRAM RELATED HERITAGE PLACES



Figure 141: Victoria Parade and Brunswick St Cable Tram Engine House during demolition 2009.
<http://indolentdandy.net/fitzroyalty/2009/12/09/a-facade-of-heritage-values/>

APPENDIX 2 LIST OF HISTORIC TRAMWAY ROLLING STOCK

APPENDIX 3 LIST OF TRAM RELATED COLLECTIONS



IMAGE	NAME	LOCATION	LISTING	SIGNIFICANCE / LINK TO STATEMENT
	No 1 Cable Car	Melbourne Museum		See also Tram List. First cable tram used on Melbourne system – US built by Stephenson, but used as model for local manufacture of several hundred between 1888 and 1924
	Electric Tram Model - MMTB, Melbourne, W2-class, No.454, 1927	Museum Victoria		Custom-built scale model constructed by Mr Gary Sneesby, Eccentric Engineering, Hughesdale, Victoria, 2007-8, depicting the W2-class drop-centre double-bogie standard-gauge electric tram No.454, built at the Melbourne & Metropolitan Tramways Board's Preston Workshops in 1927. Model scale: 1:48 (1/4-inch to the foot).
	Badge - I Will Pay my Fare to a Tram Conductor Only, Melbourne, 1989	Museum Victoria		

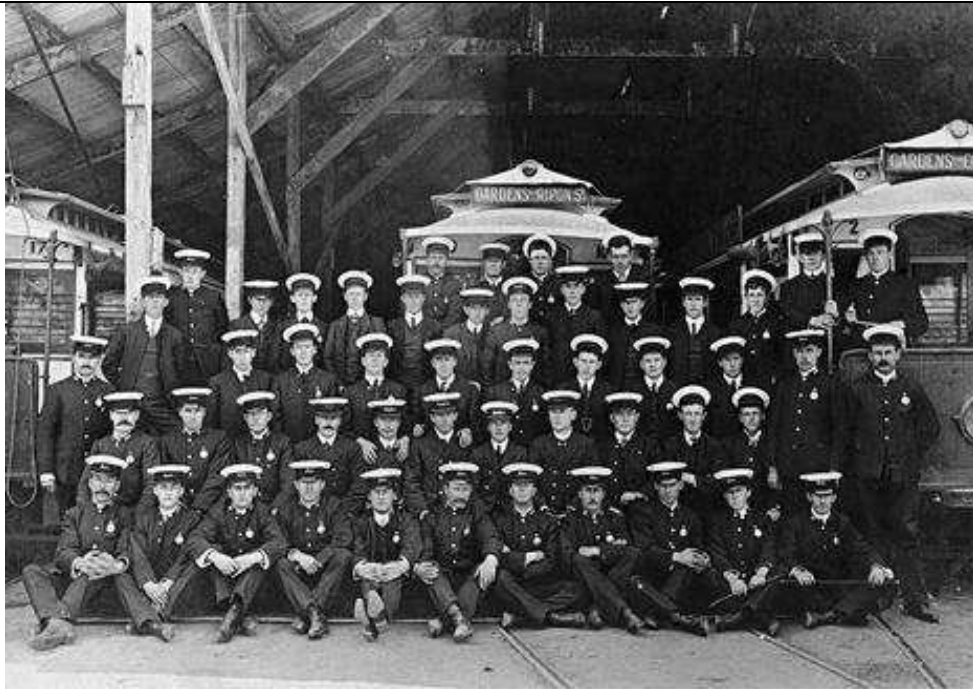

IMAGE	NAME	LOCATION	LISTING	SIGNIFICANCE / LINK TO STATEMENT
	Negative - Group Portrait of Tram drivers at Tram Depot, Ballarat, Victoria, circa 1910	Museum Victoria		
	Cable Tram Model	Museum Victoria		The closed trailer or saloon car is believed to have been displayed at the 1880 Melbourne International Exhibition as an American-style horse tram, but is similar in design to the trailer cars used by Melbourne's cable trams. By 1888 it was displayed in its present form at the Melbourne Centennial Exhibition with a grip or dummy car added to promote the introduction of trams in Melbourne.



IMAGE	NAME	LOCATION	LISTING	SIGNIFICANCE / LINK TO STATEMENT
<div><p>Enclosed trailer or saloon car model originally displayed as a horse tram model at the International Melbourne Centennial Exhibition in 1880. Image: Ben Healley Source: Museum Victoria Image 2 of 6</p>CLOSE X</div>	Tram Model ¼ scale	Museum Victoria		<p>Source: Melbourne Centennial Exhibition – 1888, exhibit No. 1152, Melbourne Tramway and Omnibus Co Ltd.. Tramcar.</p> <p>Depicted in photo of Melbourne Centennial Exhibition – 1888 American Court, Latrobe Library image LTAF 277.</p>
<div></div>		Museum Victoria		


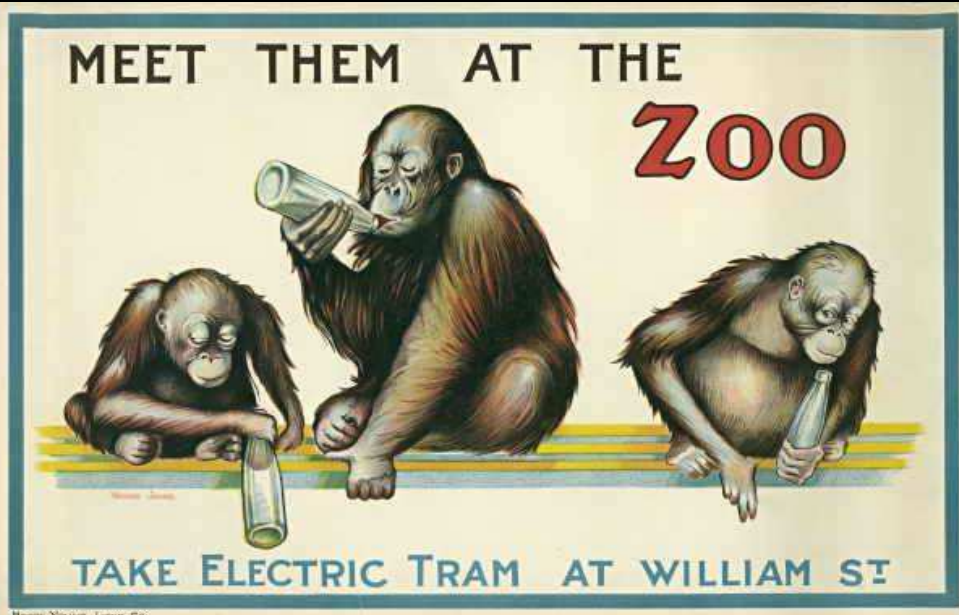
IMAGE	NAME	LOCATION	LISTING	SIGNIFICANCE / LINK TO STATEMENT
	Cable grip mechanism	Powerhouse Museum Sydney	B2437	Cable grip mechanism, full size replica, to be used with cable grip tram, metal, Chess Engineering Pty Ltd, Alexandria, New South Wales, Australia, 1981
	Ceramic Model of tram	State Library victoria	H2006.143/511; H2006.143/512	Kangoala Art ; • Phil Pinder 1945-2004 ; Model of tram, gold and black paint, number 587, with people painted inside the tram, conductor standing in doorway, driver at front.
	Poster Meet them at the Zoo -	State Library Victoria?	H2007.115/13	Poster Meet them at the Zoo - take electric tram at William St. Vernon Jones. Vernon Jones. [ca. 1930 - ca. 1939]
	Model of Melbourne SW II tram] [realia] / Kangoala Art.	State Library Victoria	H2006.143/511; H2006.143/512	Model of tram, gold and black paint, number 587, with people painted inside the tram, conductor standing in doorway, driver at front. 1 model : ceramic and paint Notes: Stamped on underside of body: Kangoala Art. Signed on underside of body and lid: P. Pinder 1995. Produced by Phil Pinder's company Kangoala Art. Gift of Ms Joan Ross ; 2005. Kangoala Art ; Phil Pinder 1945-2004 ; 1995
	[Model of Melbourne tram SW 2] [realia] / Kangoala Art.	State Library Victoria	H2006.143/509-510	Shows green tram number 007, with people painted inside the tram, conductor standing in doorway, driver at front, advertisements for the Comedy Festival and Red Herring, Bank of Melbourne, Kangoala art display on the side. Notes: Not signed or dated but circa 1990. Produced by Phil Pinder's company Kangoala Art. Gift of Ms Joan Ross ; 2005. Phil Pinder 1945-2004 ;
	Scale model of cable tram] 1897 [model] George Fish 1869-1903.	State Library Victoria	H9892	Shows a scale model of a cable tram, made of wood, brass and glass, the body is painted green with red lettering. Painted at roof level: Flinders St. Elizabeth St. and Sydney Rd. At base above wheels: Royal Brunswick Park.

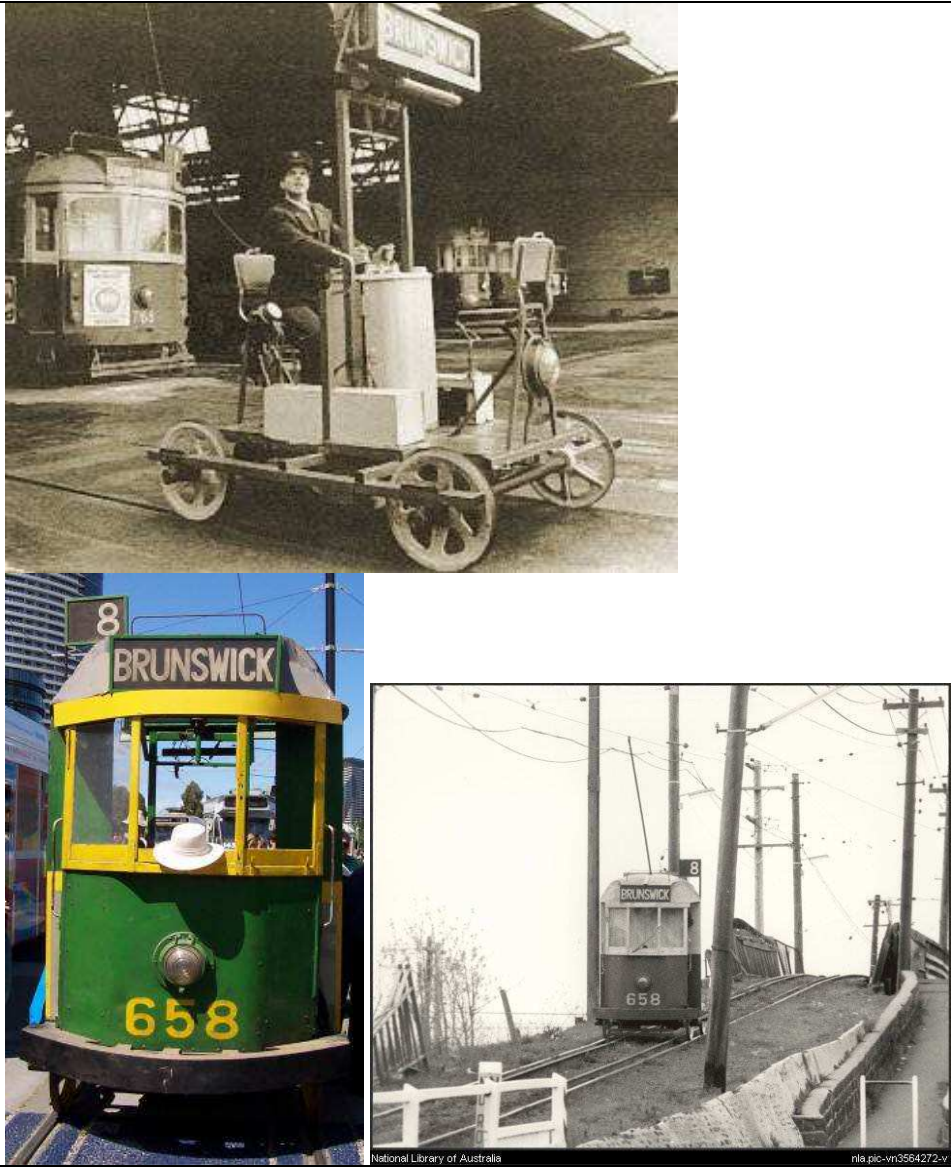
IMAGE	NAME	LOCATION	LISTING	SIGNIFICANCE / LINK TO STATEMENT
				<p>Sides of tram have number 2 in centre with decorative floral patterns painted either side. Inside, wooden seat runs the length of walls of tram with decorative design on walls behind seats. Open driver's cabin at each end enclosed in metal frame with metal breaking (?) shaft.</p> <p>* Notes: Gift of Mr. H. Fish, 1939.</p> <p>Exhibited: "The changing face of Victoria", Dome Level 5, State Library of Victoria, 26 November 2004-.</p> <p>* Biographical/Historical note: Melbourne's first cable tram, No.1, began service in 1885, joining the horse-drawn models that had commenced the previous year. This model made by Mr George Fish and donated by his son, strongly resembles the No. 1 tram but is not identical.</p>
	'Malcolm' Movie Tram	unknown	none	<p>Image nla.pic-vn3564272 Part of Matilda collection Ogden, John, 1952-</p> <p>Image from the Australian film, Malcolm, showing the front section of tram 658 with a route 8 sign and destination as Brunswick, 1986</p>



IMAGE	NAME	LOCATION	LISTING	SIGNIFICANCE / LINK TO STATEMENT
	Satchel drop box	Preston Tram Workshops (on fence)	May be included under depot listings	Significant items of moveable heritage may still be present at the depot and should be separately inventoried to ensure their conservation and retention.
	Destination board rollout bench	Preston Tram Workshops	May be included under depot listings	Significant items of moveable heritage may still be present at the depot and should be separately inventoried to ensure their conservation and retention.



IMAGE	NAME	LOCATION	LISTING	SIGNIFICANCE / LINK TO STATEMENT
	Banner - Australian Railways Union, Victorian Branch, circa 1911	Museum Victoria	Reg. No: HT 1115	Canvas banner painted about 1911 by John Hennessey of Carlton, Victoria. It was commissioned by the Victorian branch of the Australian Railways Union, and cost £100.
	Banner - Australian Tramway Employees Association, Victorian Branch, 1916	University of Melbourne Archives	Reg. No: HT 10044	<p>Painted in 1916 by George Grant for the Australian Tramway Employees Association Victorian Branch.</p> <p>Donated by the Tram & Bus Division of the Rail, Tram & Bus Union. (RTBU) Victorian Branch, 1998</p> <p>“Trade Union Banners and Labour Celebration”</p>

IMAGE	NAME	LOCATION	LISTING	SIGNIFICANCE / LINK TO STATEMENT
	Banner - Australian Tramway Employees Association, Victorian Branch, 1916	Museum Victoria	Reg. No: HT 10044	<p>This canvas banner was painted in 1916 by George Grant for the Australian Tramway Employees Association Victorian Branch.</p> <p>The Eight Hour Day Trade Union Banners are of historical and social significance for their important associations with the history of trade unionism in Victoria. The banners are important historical documents visually depicting the concerns of workers, the nature of their work, and the social and cultural aspirations and identity of trade unions. Some of the banners demonstrate the evolving nature of industry in their representation of trades that have disappeared and craft unions that have been subsumed within bigger unions. For trade unionists and many others in the community, the banners are powerful symbols of the role played by unions in advancing conditions and wages of working people.</p> <p>Museum Victoria holds the largest collection of Victorian trade union banners used in Eight Hour Day processions from the late 19th century to the First World War. The collection comprises the following eight banners: Amalgamated Society of Engineers, Blacksmiths, Fitters, Patternmakers, Turners & Machinists, Ballarat Branch, now the Australian Manufacturing Workers Union; United Ironworkers Assistants Society of Australia, Ballarat Branch, now the AMWU; Australian Railways Union, Victorian Branch, now the Rail, Tram & Bus Union; Manufacturing Grocers Employees Industrial Union of Victoria, now National Union of Workers; Amalgamated Society of Carpenters & Joiners, Victorian Branch, now the Construction, Forestry, Mining and Energy Union; Operative Painters & Decorators of Australia, Victorian Branch, now the CFMEU; Australian Tramway Employees Association, Victorian Branch, now the Rail, Tram & Bus Union; and Australian Boot Trade Employees Federation, Ballarat Branch, now the Textile Clothing & Footwear Union of Australia.</p>
	Private collections auctioned by Charles Leski Auctions (CLA) - Auction No.316, early December 2007	Not known – private collections	N/A	<p>including the late Travis Jeffrey who probably had Australia's finest collection of tickets (particularly tram and bus tickets) and especially ticket machines, butts of the Melbourne & Metropolitan Tramways Board (M&MTB) "C" and "D" series tickets that were withdrawn in 1955. Also from the M&MTB is a leather Conductor's Wallet (Malvern Depot Outfit No.69) containing 13 flimsy butts with remaining tickets in pre-decimal values from 3d to 2/3.</p> <p>Melbourne Cable Tram Conductor's Journal No.88 from the former "Esplanade A" Depot which was used to hold paperwork & tickets.</p> <p>The large collection of ticket machines includes ... Almex ticket machines were used by the stationary conductors on the "Z" class trams, but a second batch of Almex's was imported from Sweden for use on tramway buses – they were never used because of the new Melbourne ticketing system, introduced in 1983.</p> <p>Melbourne & Metropolitan Tramway's Board uniform from the 1950s.</p>
	Australian Coach Motor Car Tram Car Waggon Builders Wheelwrights & Air Craft Rolling Stock Makers Employees Federation (1930 - 1938)	The University of Melbourne Archives		Australian Coach Motor Car Tram Car Waggon Builders Wheelwrights & Rolling Stock Makers Employees Federation (1917 - 1930)
	Australian Rail Tram & Bus Industry Union (1993 -)	The University of Melbourne Archives		Significant historical archival collection of unique primary documents
	Australian Railway & Tramway Service Association	The University of Melbourne Archives		Significant historical archival collection of unique primary documents
	Australian Tramway & Motor Omnibus Employees Association (i) (1934 - 1950)	The University of Melbourne Archives		Significant historical archival collection of unique primary documents

IMAGE	NAME	LOCATION	LISTING	SIGNIFICANCE / LINK TO STATEMENT
	Australian Tramway & Motor Omnibus Employees Association (ii) (1950 - 1993)	The University of Melbourne Archives		Significant historical archival collection of unique primary documents
	Australian Tramway and Motor Omnibus Employees' Association, Perth Branch - Minute Books, 1925-1963, 1925 - 1963,	JS Battye Library of West Australian History, State Library of Western Australia	MN 775	Significant historical archival collection of unique primary documents
	Australian Tramway & Motor Omnibus Employees Association - Records, 1943 - 1993,	The Noel Butlin Archives Centre, ANU Archives Program	Z554;	Significant historical archival collection of unique primary documents
	J. Clancy - Papers, 1928 - 1969,	State Library of South Australia, Mortlock Library of South Australianiana	BRG 116;	Significant historical archival collection of unique primary documents
	Australian Tramways and Motor Omnibus Employees' Association, Victorian Branch -	The University of Melbourne Archives	Records, 1911 - 1982, 1983.0088; 1940 - 1990, 1992.0074; 1935 - 1955, 1979.0127; c. 1920 - c. 1960, 1979.0105; 1911 - 1967, 1979.0081; 1911 - 1973, 1974.0103.	Significant historical archival collection of unique primary documents
	Australian Tramway Employees Association (1910 - 1934)	The University of Melbourne Archives		Significant historical archival collection of unique primary documents
	drawings, tickets, fare tokens, timetables, rulebooks, personal records, operational paperwork, uniforms, Conductors' bags, safeworking equipment, tramway street furniture (eg stop signs), record books, references used in the operation and maintaining the system, ancillary equipment such as a tower trucks. Also archives, oral histories, pictorial records and tramcar parts.	Ballarat Tramway Museum	Collection policy http://www.btm.org.au/document s/btmcollpol.pdf	“The large collection artefacts, photographs, oral histories, small items and parts, form a comprehensive sample of the materials needed to operate and maintain a public transport tramway system and the people who operated it or collected its history. They can be used as a research and interpretation facility for those interested in the social development of Ballarat and public transport development in conjunction with the generation of electricity in Victoria’s major provincial cities.”
	Flying Tram from Commonwealth Games opening ceremony	Melbourne museum		2006 Commonwealth Games Opening Ceremony.


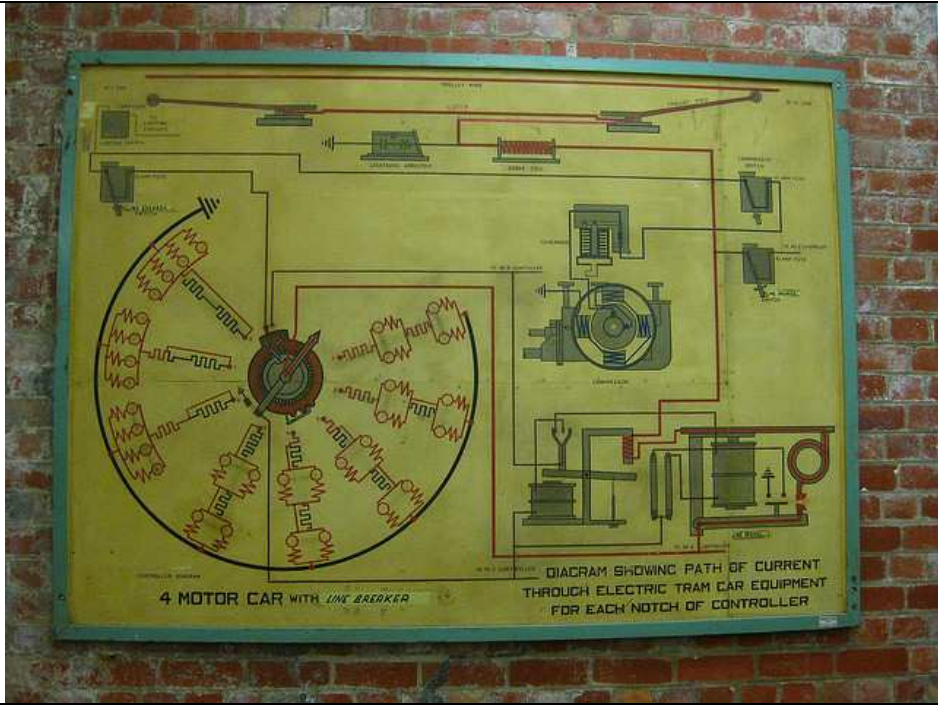
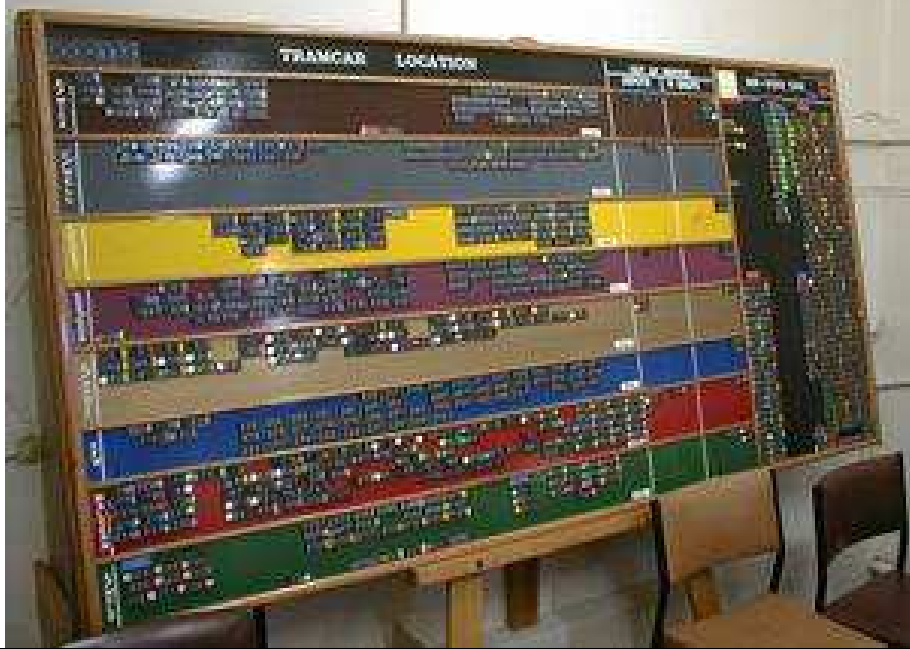

IMAGE	NAME	LOCATION	LISTING	SIGNIFICANCE / LINK TO STATEMENT
	Timber model of a Melbourne tram Australia, circa 1950,	Private collection CARTER'S Everything Vintage 2007		Similar items may come up for private auction in future wand would be desirable to add to collections to fill gaps
	Enamel Melbourne tram sign 'Hail Cars Here'	Private collection CARTER'S Everything Vintage 2007	N/A	Similar items may come up for private auction in future wand would be desirable to add to collections to fill gaps
	Tram destinations are now expensive decorations.	Not known	N/A	Private purchases Similar items may come up for private auction in future wand would be desirable to add to collections to fill gaps

IMAGE	NAME	LOCATION	LISTING	SIGNIFICANCE / LINK TO STATEMENT
				<p>A look back at Melbourne trams, as the era of the W-class old-timers comes to an end.</p> <p>Jim Pavlidis on Melbourne transportation. <i>Photo: Jim Pavlidis</i></p>
	Transport Mural	Spencer Street Southern Cross Station	VHR	<p>The History of Transport Mural is historically important as the first of a series of public art works commissioned by the State Government following the appointment of Harold Freedman as State Artist in 1972. The position of State Artist, (1972-83) was unique in the history of Victoria and Australia. The mural is the largest work painted by Freedman and the most ambitious narrative work of its kind in the state.</p> <p>The History of Transport Mural is culturally and socially important as a graphic public record and celebration of the role transport played in the development of the state from a simple pastoral settlement to a modern progressive industrialised entity during its first century.</p>
	Norm Maddock collection	former hall at Malvern Tram depot Stanhope Street.		<p>The TMSV has a large number of archives at our archive room at Malvern that were placed in the care of our archivists Robert Green and Norm Maddock many years ago.</p>

IMAGE	NAME	LOCATION	LISTING	SIGNIFICANCE / LINK TO STATEMENT
	AT&MOEA collection	Malvern depot		John Wayman from the TMSV indicated in a letter the need to manage cataloguing the TMSV collection and make sure that the collection is properly distinguished from the Norm Maddock collection, the AT&MOEA collection and VicTrack owned items located in the same building.
	VicTrack collection	Malvern depot		Following the abandonment of the old MMTB head office building, Kings and Green sorted and collected items from the basement of 673 Bourke Street. This material including books, plans, publications, official documents, reports etc. that the Public Records Office classed as Secondary Records. The TMSV was permitted to take and house any of these documents at its rooms at Malvern Depot under an agreement with the PRO, which appointed the rooms as a “Place of Deposit for sentenced temporary and duplicate records of the Metropolitan Transit Authority”. Many boxes of records were thus taken to Malvern and stored.
	TMSV archives	archive room at Malvern depot		The TMSV Archive Collection was initiated by the late Bob Prentice in the 1960s and stored at his home in Prahran. At some stage all of the collection was handed over to the TMSV. A collection of copy images of historic photographs, taken by Bob Prentice from many sources on behalf of the TMSV, were not the handed over and remained with Bob Prentice’s beneficiaries. Robert Green and possibly Keith Kings, were made the TMSV archivists and arrangements were made for the TMSV to obtain access to three disused upstairs rooms at the Malvern Depot in which to store the collection. A grant was also obtained to purchase appropriate archive storage equipment and a Federal government funded cataloguing kit. The collection was roughly sorted out and stored in these rooms. Norm Maddock subsequently took on the management and opening the museum in the former Stanhope Street hall, to the public. Also included was the A E Twentyman collection of cable tram material, which was acquired and transferred to the TMSV after his death. More recently funding was provided for a conservation assessment and some cataloguing, which it is understood was carried out by the VCCM, but was halted due to disagreements between the parties.

IMAGE	NAME	LOCATION	LISTING	SIGNIFICANCE / LINK TO STATEMENT
	Hawthorn Tram Depot collection	Heritage tram collection @ Hawthorn Depot	Some items may be listed in conjunction with building	Significant drawings and some specialist equipment included in collection which is primarily focussed on rolling stock
	Tramcar location Board	Preston Tram Workshops	May be included under depot listings	Significant items of moveable heritage may still be present at the depot and should be separately inventoried to ensure their conservation and retention.
	Tramway Museum Society Victoria	Bylands Tram Museum	N/A	steel wheeled wagon used for hauling reels of cable from the ship to the cable tramway powerhouse. Photographed in February, 2006 by Bob Murphy. the Melbourne Tramway Museum also has a tramway electric supply substation, the William Street decorative overhead poles, the 1923 Batman Avenue shelter, various buildings for the storage of unrestored trams, cable tram cars and motor vehicles. It also has a visitor centre and exhibition shed and workshop.

Melbourne Metropolitan Tramway Study, Gary Vines, 2011

List of preserved heritage fleet trams and surviving historic trams

Contents

1..... Cable Trams (13 items) 3

2..... Victorian Railways Trams (8 items) 5

3..... Pre M&MTB Trams..... 7

3.1 Ex NMETLCo Trams (Class U, V) (3 items) 7

3.2 Ex PMTT Trams (Class B, C, E, F, G, H, J) (17 items) 8

3.3 Ex HTT Trams (class M, N, O, P) (21 items) 11

3.4 Ex MBCTT Trams (Class S, T) (3 items) 14

3.5 Ex FTT Trams (Class M) (2 items) 15

4..... M&MTB Trams 16

4.1 Q, R, X, X1, X2, Y, Y1, & L Class Trams (23 items) 16

4.2 W Class Trams (73 items) 19

4.3 Restaurant W Class trams (3 items) 28

4.4 Z Class (4 items) 29

4.5 Prototypes (2 items) 30

4.6 Service Stock (9 items) 30

4.7 Transporting Art Painted W Class Trams (36 items) 32

5..... Melbourne Trams overseas (43 items) 37

6..... Replica trams (4 items) 41

7..... Non Victorian Trams preserved in Victoria (6 items) 42

8..... W Class Trams Stored at Newport Workshops, Preston and elsewhere (175 items) 43

8.1 W Class 219 to W 418 43

8.2 W1 Class 419 to 438 47

8.3 W2 Class 439 to 458 47

8.4 W1 Class 470 to 479 48

8.5 W2 Class 480 to 653 48

8.6 W3 Class trams 654 - 669 (16 trams) 52

8.7 W4 Class trams 670 to 674 - 5 trams. 52

8.8 CW5/W5 class trams 681 to 685 - 5 trams. 52

8.9 W5 Class Trams 720 to 839 52

8.10 SW5 Class 840 to 849. 54

8.11 SW6 Class 850 to 969. 55

8.12 W6 class trams 970 to 979, 981 to 1000 - 30 trams. 57

8.13 W7 Class 1001 to 1040 58

The following lists have been primarily sourced from the Tramway Museum Society of Victoria register, Bylands tramway museum records and the Melbourne Tram Museum @ Hawthorn Depot listings, all of which are available on-line.

These have been cross checked with other available on-line and published details, especially data from the “Trams of Australia” site maintained by Railpage Australia, <http://www.railpage.org.au/tram/.the>

Other trams in the Bendigo Tramway Museum Fleet register, <http://www.discovery.asn.au/bendigotramways.com/images/stories/pdf/aboutfleetregister.pdf>
<http://www.discovery.asn.au/bendigotramways.com/images/stories/pdf/aboutothertrams.pdf>

Also checked against Doug Colquhoun, Preserved Trams list. - <http://www.users.on.net/~wisp/TESSA/PreservedTrams.pdf>

Note the modern (current) fleet of trams, (apart from a sample of the Z Class), comprising the Z, A, B and C Class trams, have not been considered in the context of their potential heritage value.




The last group – listing all known W class Trams, has been compiled from an uncredited website - “W Class Trams”
http://www.reocities.com/z_class/wclass.html but could not be verified, or its author(s) contacted.



Abbreviations of Tram Museums

AETM, Australian Electric Traction Museum South Australia
Bendigo Tramways reservation Society
Ballarat Vintage Tramway
MTPA, Melbourne Tramcar Preservation Association
TMSV, Tramway Museum Society of Victoria Bylands




1. Cable Trams (13 items)





Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance/ Nomination
MTOC	No 1		Single truck cable tram dummy car	1885. John Stephenson & Co., New York,	1884-1940	26/10/1940	Museum Victoria – donated to science museum 1940	First passenger run 11:11:1885 and last passenger run 26:10:1940. restoration by M.M.T.B. at Preston workshops during 1974. Display of tram unveiled by premier Hon. R.J. Hamer 1:5:1975.	National – VHR
MTOC	No. 28		Single truck cable tram dummy car		11 November 1885 1928	26 October 1940	TMSV Bylands, on loan to Melbourne Tram Museum @ Hawthorn Depot.	Restored standard cable tram dummy locomotive.	State VHR
MTOC	No. 436	 	Single truck cable tram dummy car		Rathdowne Street Carlton to Brighton Road, St Kilda		TMSV Bylands, privately preserved by Mr A. E. Twentyman.	Restored by Alf Twentyman, at Bylands standard cable tram dummy. It is notable for having been purchased from the M&MTB on withdrawal in 1935 by Alf Twentyman for preservation.donated to the Society on his death together with the other two tramcars that make up the Twentyman Collection.	State VHR
MTOC	No.?		Single truck cable tram dummy car	1885?	1885-1940		1963 donated to Powerhouse Museum Sydney by Monash University in Melbourne and restored to look like a King Street, Sydney, cable tram.	http://from.ph/207935	
MTOC	No. 190	No Image Available	Bogie cable tram trailer saloon car (incomplete)		Unknown Elizabeth Street to Brunswick line.	retired in 1935,	1998, TMSV Bylands		

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance/ Nomination
MTOC	No. 192	No Image Available	Bogie cable tram trailer saloon car spliced together from two six-window horse or cable tram trailers		Unknown		TMSV Bylands		
MTOC	No. 256		Single truck cable tram trailer saloon car		Unknown MTOC Zoological Gardens tram route	line closed in 1923.	TMSV Bylands	Originally a standard eight window cable tram trailer. During the later years of the Zoological Gardens tram route, converted for use as a horse tram until the line closed in 1923. This is believed to be the only operation of an eight window horse tram used by the MTOC, all other horse trams were purpose built six window cars.	State VHR
MTOC	No. 290		Single truck cable tram trailer saloon car standard eight window		Unknown		TMSV Bylands	Purchased in 1930 by Alf Twentyman	State VHR
MTOC	No. 299		Single truck cable tram trailer saloon car standard eight window original #49		Unknown		TMSV Bylands	Major restoration in the 1970's standard eight window single truck cable tram trailer. It underwent major restoration in the 1970's in Melbourne and Bylands and is in good condition.	
MTOC	No. 462	No Image Available	Single truck cable tram trailer saloon car standard eight window		Unknown		TMSV Bylands	obtained in the late 1970's on loan to Heritage Tramcar Fleet, and is stored at Newport Workshops	
MTOC	No. 475	No Image Available	Bogie cable tram trailer saloon trailer (incomplete twelve window bogie tram trailer purpose	1901	Unknown Elizabeth Street to Brunswick line	retired from service in 1935	TMSV Bylands	Body acquired by the Society in 1993	

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance/ Nomination
			built						
MTOC	No. 485		Cable Tram trainer		City to Coburg along Sydney Road		Obtained by TMSV Bylands from Sunshine backyard in 1996.	Built as a new complete vehicle, unlike some other bogie cable trailers, which were spliced together from two six window horse tram trailers. Number 485 is shown on genuine cable tram bogies which had been retained by the M&MTB after the bodies were scrapped. These bogies were subsequently used at the M&MTB's Preston Workshops.	
MTOC	No. 586		Single truck cable tram trailer saloon car standard eight window		Unknown		TMSV Bylands	Purchased by Alf Twentyman in 1941	

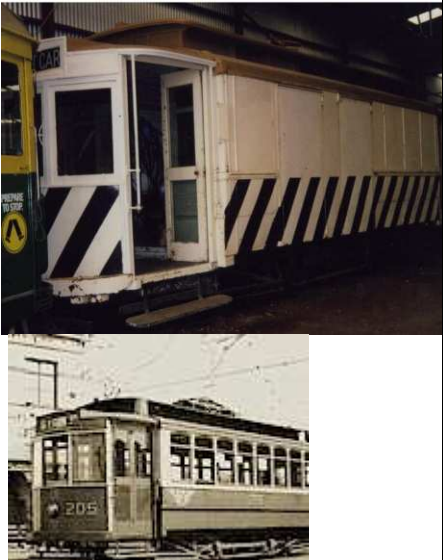


2. Victorian Railways Trams (8 items)

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance/ Nomination
VR	20		4 wheel Single-truck, closed cross-bench	1913 Pengelley and Co. SA	May 1913 St Kilda to Brighton Beach tramway	closure of the Brighton tramway in February 1959.	purchased by Bob Prentice and lived in his Prahran backyard until his death in 1992 left to VicTrack.	Built for the St Kilda to Brighton Beach line, VR.20 Converted to Breakdown Tram in 1929. Sold in 1959 for private preservation. Recovered in 1992.	State VHR
VR	34		Bogie drop-centre	VR Newport Workshops	1918 (VR)	1959 (VR)	1959 TMSV Bylands – restored using trucks from L102	Built for the St Kilda to Brighton Beach line, part of an order for 20 broad gauge trams that was later reduced to 16 due to low patronage. Another four were built for the standard gauge Sandringham to Black Rock and Beaumaris line. They were the first four motor drop centre tramcars built for service in Australia, setting the trend for Melbourne tram design until 1956. This tram was partly modified for use on the Black Rock line, but it remained in service on the Brighton Beach line until closure in 1959.	State VHR
VR	41		Bogie drop-centre	VR Newport Workshops	1923	31st December 1958	Melbourne Tramcar Preservation Association, Haddon	Victorian Railways tramcar restored for the Melbourne Tramcar Preservation Association.	State VHR
VR	48		Bogie drop-centre	VR Newport Workshops	1921	1956	Canberra	Held by the Canberra Trademen's Union Club for future restoration.	
VR	49		Bogie drop-centre	VR Newport Workshops	1921	1956	Canberra	Held by the Canberra Trademen's Union Club for future restoration.	
VR	51		Bogie drop-centre	VR Newport Workshops	1921	1956		Body located at Marysville, Victoria	

VR	52	 	Bogie drop-centre	VR Newport Workshops	1942 (VR)	1975 (MMTB)	1982 TMSV Bylands	One of three built for the broad gauge Brighton Beach line in 1941, as part of a rehabilitation program. Many electrical components were parts acquired for the cancelled four drop centre cars of the same type as No 34. The design was based on the M&MTB SW6's then under construction, but they were shorter, had narrower sliding doors and two piece driver's windscreens. On closure of the Brighton Beach line, this tramcar and its sister cars, were sold to the M&MTB. The M&MTB fitted standard gauge trucks and it entered service in 1959.	State VHR
VR G	53	 	broad gauge Brill 77E trucks	1941,VR's Newport Workshops	Victorian Railways broad gauge line St Kilda Railway Station and Brighton Beach	September 1980	long term loan from ARHS to Melbourne Tram Museum @ Hawthorn Depot.	On closure of the Brighton Beach line in 1959, this tramcar along with its two sister cars, Nos. 52 and 54, were sold to the M&MTB. These three tramcars were notable for being the only passenger tramcars acquired and operated by the M&MTB from another operator after its initial formation in the early 1920s. The M&MTB replaced the broad gauge Brill 77E trucks with standard gauge No 15 trucks, allowing No 53 to enter service in July 1960.allocated to Essendon Depot and mostly used on the Footscray to Moonee Ponds line. These cars were unpopular with drivers due to the central windshield division obscuring the driver's forward vision, and the narrow doorways meant that passenger loading and unloading were slow. In 1973 this tramcar was fitted with standard front and rear marker lights, and the drop centre was modified with wider sliding doors, improving the passenger loading speed. Three years later renumbered to 700, to avoid duplication with the Z1 class cars then entering service.	State VHR




3. Pre M&MTB Trams




3.1 Ex NMETLCo Trams (Class U, V) (3 items)

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	
U NMETL	205 North Melbourne No. 4, Ad 19, Freight 19W		Bogie Tank Car built as single truck saloon	1906 Brill	1906 No. 4 (NMETL), advertising car 9n 1938	1978	1986 TMSV Bylands	1922 renumbered as U Class No. 205 (MMTB). 1950 Converted to Advertising Car No. 19, subsequently converted to Freight Car and renumbered in 1976 as 19W. built by the J.G. Brill Company of Philadelphia for the North Melbourne Electric Tramway & Lighting Company. Numbered in the range 202-211 in M&MTB service, only four cars were still in passenger traffic in 1936-37 at the introduction of all-night services: numbers 205-206, 209 and 211. These cars would be progressively withdrawn from passenger service between 1938 and 1939, and either converted to service stock use or scrapped by 1945.	State VHR
V NMETL	No 13 (M&MTB No 214)		4 wheel cross-bench	1906, J.G. Brill assembled by Duncan & Fraser,	NMETL No 13	1925 converted to ballast trailer, 1977 replaced with road vehicle	Melbourne Tram Museum @ Hawthorn Depot. 8 Wallen Road VHR H2147	Registered Victorian Heritage Database Withdrawn from passenger service in 1925, and initially used for hauling ballast trailers on construction of the West Coburg line. Two years later, fitted with windscreens and enclosed with a box type body for use as a freight car, and renumbered as No 2A. In this form used to carry spare parts and other materials from Preston Workshops to each of the running depots to enable minor tramcar repairs to be carried out locally. In 1934renumbered to 17, but continued in its use as a freight car, although subsequently equipped with higher power motors in 1950.further modified in 1959 to carry large advertising panels on its sides, but it continued carrying freight between the depots. renumbered to 17W during April 1976 to avoid duplication with the brand new Z1 class orange trams, but withdrawn from traffic in October 1977 and replaced with a motor truck.	State
V NMETL	No. 24		Ballast trailer	1906 by Duncan & Fraser	1925 (converted from unclassified passenger trailer)	1969	1976 TMSV Bylands	Single truck open toast rack passenger trailer, for the NMETL. for use towed behind their electric tramcars They were taken over by the M&MTB on acquisition of the NMETL, and numbered 51-60. All were withdrawn after a serious accident involving V No 214 and trailer No 58. In 1925, five of these trailers were converted for use as ballast trailers, one of which was numbered No 24.further modified in 1964 when the body sides were raised and bottom dumping hoppers fitted.	

3.2 Ex PMTT Trams (Class B, C, E, F, G, H, J) (17 items)







[illegible]





Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance/ Nomination
E	41 PMTT 41 MMTB E41, C41 Ballarat 38		Bogie drop centre	1914, Duncan & Fraser	P&MTT	Transferred to Ballarat 1951	Ballarat	originally P&MTT-41, at MMTB takeover became E41, in 1928 re-designated C41, in 1951 became Ballarat No. 38 preserved by the Ballarat Tram Museum as Ballarat 38. E41 (originally PMTT-41, at MMTB takeover became E41, in 1928 re-designated C41, in 1951 became Ballarat No. 38) preserved as ??? at the Ballarat Vintage Tramway	
E	42 P&MTT 42 MMTB E42 Ballarat 39		Bogie drop centre	1914, Duncan & Fraser	P&MTT	Transferred to Ballarat 1951	Ballarat	preserved by the Ballarat Tram Museum as Ballarat 39. E42 (originally PMTT-42, at MMTB takeover became E42, in 1928 re-designated C42, in 1951 sold to SAEC became Ballarat No. 39) at the Ballarat Vintage Tramway	
E	44 PMTT 44 MMTB E44, C44 SECV Bendigo 44		Bogie drop centre	1914, Duncan & Fraser	P&MTT	sold to the SECV Bendigo Tramways in 1951 to become #17.	Bendigo	preserved by the Bendigo Trust as MMTB 44. This tram first operated in Melbourne as Prahran and Malvern Tramways Trust #44. E44 (originally PMTT-44, at MMTB takeover became E44, in 1928 re-designated C44, in 1951 became Bendigo No. ??), preserved as something similar to PMTT-44 at the Bendigo Tramways Work commenced on the tram's restoration as PMTT #44 and it became available for service as a talking tram in April 1981.	
E	45 PMTT 45 MMBT E45, C45 Bendigo 18 Ballarat Tramways 45		Bogie drop centre	1914 Duncan & Fraser	P&MTT	sold to the SECV Bendigo Tramways in 1951 to become #18.	Bendigo restored 1974 and 1980-3	preserved by the Bendigo Trust as Bendigo 18. converted to one-man operation in 1952, but because of union 'work-to-rules' measures, Photo: Doubleday, W (2002) <i>Trolley Wire No 285 Vol 42. No. 2</i> , Sutherland, NSW: South Pacific Electric Railway Cooperative Society Ltd. 1 E45 (originally PMTT-45, at MMTB takeover became E45, in 1928 re-designated C45, in 1951 became Bendigo No. 18), preserved as Bendigo 18 (now rebuilt to a saloon design without drop-centre) at the Bendigo Tramways	
F	46 P&MTT 36			1912 Duncan & Fraser.	1912 (P&MTT)	1929	TMSV Bylands	One of two tramcars built to this design for the P&MTT Originally number 36, shortly after delivery renumbered to 46, its old number being taken by the first of the E class maximum traction tramcars. unusual as centre aisle crossbench summer tramcar. In late 1923, rebuilt as a closed combination car. removed from service in 1929 and the body sold. The body of this tramcar was recovered from a house in Mentone in 1982.	State VHR
H	55			1913	1913 P&MTT	1928	TMSV Bylands	Awaiting restoration preserved by the TMSV as MMTB H55. Body sold between 1930 and 1931. Was part of a house in Mentone. To be restored to original condition.	
J	65 PMTT 65 MMTB J65 Ballarat 11		4 wheel Single truck California Combination	1915 Meadowbank Manufacturing Company	1916 PMTT Ballarat,		Ballarat?	Status unknown Ballarat 11 is believed to be in storage	


Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance/ Nomination
	PMTT 67 Ballarat 19		Single truck California Combination	1915 Meadowbank Manufacturing Company	1916 PMTT Ballarat, Bendigo	Sold to the ESCV Ballarat in 1930s Transferred to Bendigo 1960	Bendigo in storage	Converted to Ballarat style one-man configuration at Ballarat. Transferred to Bendigo in 1960 along with Ballarat #25 in exchange for Bendigo bogie #1. restored to the livery first used when it arrived in Bendigo.	
J	71 Ballarat 12			1915 Meadowbank	Ballarat	1928 MMTB	Sydney Tram Museum	preserved by the Sydney Tram Museum as Ballarat 12. was built into a house before acquired by museum in 1990	
J	73 (Ballarat No. 29, 17)		4 wheel Californian combination car	1915 Meadowbank	1915 (P&MTT)	Sold to SECV Ballarat in 1932, withdrawn 1971	1971 TMSV Bylands as Ballarat 17.	This tram was built in 1915 by the Meadowbank Manufacturing Company of NSW for the P&MTT. one of 20 J class single truck drop end open California combination tramcars, and held No 73.taken over by the M&MTB in 1920, and acquired by the SECV in 1931, for service in Ballarat, where it became No 29.renumbered No 17 in 1935 when Geelong No 29 was transferred to Ballarat. On delivery to Ballarat modified to one man condition, and underwent further modification to make it more suitable for one man use between 1935-7.	
J	75 Ballarat 14			1915 Meadowbank		1928 MMTB	Ballarat	preserved by the Ballarat Tram Museum as Ballarat 14.	
J	76 Bendigo 7			1915 Meadowbank		1928 MMTB	Bendigo	preserved by the Bendigo Trust as Bendigo 7.	
J	82 PMTT82 MMTB 82 Ballarat 12			1915 Meadowbank			Ballarat	Status unknown	

3.3 Ex HTT Trams (class M, N, O, P) (21 items)

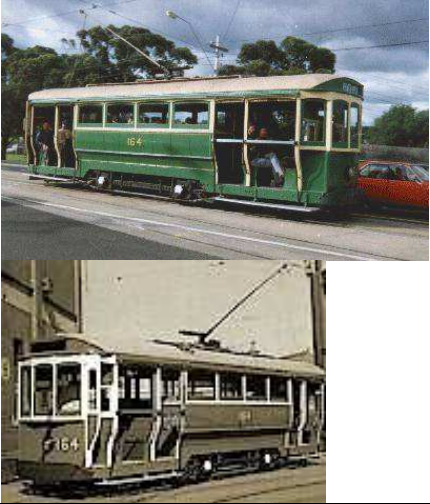


Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance/ Nomination
M	107 HTT 1 Bendigo 12		California combination tram	1916 Duncan and Fraser	HTT	Sold to ESCV Bendigo 1930	Bendigo In storage and body dismantled in preparation for restoration as HTT #1	preserved by the Bendigo Trust as Bendigo 12. Numbers 107-116 built for the Hawthorn Tramways Trust (HTT) and originally numbered 1-10. Trams 183-189 were built for the Footscray Tramways Trust (FTT) but entered service after the formation of the MMTB in 1920. Unlike trams 107-116, trams 183-189 are 10 metres in length. First of the ex-Melbourne trams to arrive in Bendigo. In 1935 renumbered as #12, converted to Bendigo style one-man configuration during the 1930s. In 1962, withdrawn from service by the SECV because "black-banned" by the Bendigo Branch of the ATMOEA. for poor condition and not suitable for traffic.	State – oldest HTT car VHR
M	110 Hawthorn 4 Bendigo 6		Single Truck Tram	1916 Duncan & Fraser	HTT	Sold to Ballarat tramway 1930s transferred to Bendigo 1960	Bendigo	preserved by the Bendigo Trust as Bendigo 6.	
M	111 Ballarat 26			1916	HTT		Ballarat	preserved by the Ballarat Tram Museum as Ballarat 26. M111 (originally HTT-5, at MMTB takeover became M111, in 1928 re-designated A111, in 1930 became Ballarat No. 26), preserved as Ballarat No. 26.	
M	113 Ballarat 28			1916	HTT		Ballarat	preserved by the Ballarat Tram Museum as Ballarat 28.	
M	114 HTT 8 Bendigo 3			1916 Duncan & Fraser	1916 as M Class No. 8 (HTT)	1956 (SECV)	1956, Donated to Australian Electric Traction Association 1963 TMSV (On loan to Melbourne Tram Museum @ Hawthorn Depot.	preserved as HTT 8 as part of the PTC heritage tram fleet. HTT taken over by the M&MTB in 1920, and renumbered 114. In 1930, this car, along with several others, was sold to ESV for service in Bendigo, where it became No 3. The SECV took over ownership of the Bendigo tramways in 1931, never modified for use as a one-man car, and was removed from service in 1956. In 1992, placed on a 25 year loan to the Victorian State Government, who restored it back to near original condition as Hawthorn No 8.	State –HTT car in original configuration VHR
M	116 HTT 10 Ballarat 27			Duncan and Fraser 1917	Hawthorn Tramway Trust 1916, MMTB 1919, Ballarat 19230-1971		Ballarat	preserved by the Ballarat Tram Museum as Ballarat 27. Tram no. 27 was built by Duncan and Fraser in 1916 as Hawthorn Tramways Trust No. 10. taken over by Melbourne & Metropolitan Tramways Board in 1919 and became 'M' class No. 116. sold to Ballarat in June 1930 and renumbered 27. Used in Ballarat until 1971 tram no. 27 did a total mileage of 987,283.	
M	187 FTT/MMTB 187 Bendigo 20		Single truck tam	1917 Duncan & Fraser	1920 FTT	sold to the SECV Bendigo Tramways in 1951 black banned 1966	Bendigo	Ordered by FTT but delivered to MMTB preserved by the Bendigo Trust as Bendigo 20.	

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance/ Nomination
M	188 FTT/MMTB 188 Bendigo 21		Single truck tam	1917 Duncan and Fraser	HTT/FTT 1920	Sold to Bendigo in 1935	Bendigo	arrived in Bendigo in 1935. As Bendigo #21, it has retained its one-man configuration and in 1975 the body work received attention and was painted in the SECV livery of the 1930s. In October 1992repainted in the grey, white and blue livery of the HTT/FTT to celebrate a significant event in the history of the City of Footscray. This livery was temporary, with the colours of the HTT being represented in the future with the restoration of HTT #1. re-painted in a more accurate representation of its 1930's livery.	
N	119 MMTB N119, C119 HTT 13 Geelong 35 Bendigo 1 Ballarat 37		Bogie drop centre	1916 Duncan & Fraser	HTT	1945 – transferred to Geelong	Sydney Tram Museum	preserved by the Sydney Tram Museum as Ballarat 37. N119 (originally HTT-13, at MMTB takeover became N119, in 1928 re-designated C119, circa 1945-48 became Geelong No. 35, later became Bendigo's second No. 1, and later still became Ballarat's second No. 37), preserved as Ballarat No. 37 at Sydney Tramway Museum. This tram seems to have been everywhere.	
N	120 MMTB N120 HTT 4 Geelong 33 Bendigo 2?		Maximum Traction Bogie Tram	1916 Duncan & Fraser	HTT	1947 transferred to Geelong 1956 transferred to Bendigo	Bendigo	preserved by the Bendigo Trust as Bendigo 2. N120 (originally HTT-14, at MMTB takeover became N120, in 1928 re-designated C120, in 1947 sold to the SECV and became Geelong No. 33, and later became Bendigo's 2nd No. 4? No. 2?), preserved as Bendigo No.2 ?? at the Bendigo Tramways	
N	122 HTT 16 MMTB N122 Geelong 32 Bendigo 3		Maximum Traction Bogie Tram	1916 Duncan & Fraser	HTT	sold to the SECV Geelong tramways in 1947, transferred to Bendigo1956	Bendigo	preserved by the Bendigo Trust as MMTB N122. Formerly Geelong #32 and Bendigo #3. Restored in 1975painted in the original chocolate and cream livery of the M&MTB. N122 (originally HTT-16, at MMTB takeover became N122, in 1928 re-designated C122, in 1947 sold to the SECV and became Geelong No. 32, and later Bendigo's 3rd No. 3), preserved as MMTB No. 122 at the Bendigo Tramways	State – best example Maximum Traction bogie tram VHR
N	123 HTT 17 MMTB N123 Bendigo 4		Maximum Traction Bogie Tram	1916 Duncan & Fraser	HTT	sold to the SECV Bendigo Tramways in 1945	Bendigo	preserved by the Bendigo Trust as Bendigo 23. N123 (originally HTT-17, at MMTB takeover became N123, in 1928 re-designated C123, in 1945 was sold to the SECV and became Bendigo No. 23), preserved as Bendigo No. 4 at the Bendigo Tramways	
N	126 MMTB N126 HTT 20 Geelong 34,	 (n.b. – image of model)	Maximum Traction Bogie Tram	1916 Duncan & Fraser	HTT	1947 transferred to Geelong 1956 transferred to Bendigo	Bendigo	N126 (originally HTT-20, at MMTB takeover became N126, in 1928 re-designated C126, in 1947 was sold to the SECV and became Geelong No. 34, and later Bendigo's 3rd No. 2?? No. 4??) , preserved as Bendigo No. 23 at the Bendigo Tramways	





Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance/ Nomination
	Bendigo 23								
O	130 PMTT 24 HTT 24 Adelaide D192		Bogie drop-centre	1912 Pengelley	1916, HTT	Sold to MTT Adelaide	South Australia	preserved by the Australian Electric Transport Museum SA as Adelaide D192	
P	132 HTT 26 MMTB C132 Ballarat 15 Ballarat 32	 	Maximum Traction, Bogie, Drop end and Centre Combination Saloon	Duncan and Fraser 1917	1917-8 (HTT) Designated C132 1928 by MMTB	1971 (SECV)	1971 TMSV Bylands	P132 (originally HTT-26 at MMTB takeover became P132, in 1928 re-designated C132, in 1945 was sold to the SECV and became Ballarat No. 15, later became Ballarat No. 36), Originally P class 26, one of eight P's built for the HTT by It's a maximum traction bogie drop end drop centre combination. When the M&MTB took over HTT in 1920renumbered 132. These tram were built with full width seats in the drop centre, but had a centre aisle cut through them in 1924-6. In 1945 this car was sold to the SECV for service in Ballarat, where renumbered 15 and had four seats in the drop centre removed, to accommodate prams and shopping carts. renumbered again in 1953, to 32. preserved as Ballarat No. 32 at the Tramway Museum of Victoria	
P	133 HTT 27 Bendigo 25		Maximum Traction, Bogie, Drop end and Centre Combination Saloon	Duncan and Fraser 1917	HTT	sold to the SECV Bendigo Tramways in 1947 to become #25.	Bendigo	(originally HTT-27, at MMTB takeover became P133, in 1928 re-designated C133, in 1947 became Bendigo No. 25), preserved as Bendigo No. 25 at the Bendigo Tramways by the Bendigo Trust In 1972, this tram was selected as one of four cars to inaugurate the talking tram service for The Bendigo Trust and was painted in the new livery of The	
P	135 HTT 29 M&MTB # 135. Bendigo 26		Maximum Traction, Bogie, Drop end and Centre Combination Saloon	Duncan & Fraser 1917	1917 HTT	sold to the SECV Bendigo Tramways in 1947	Bendigo	Preserved as Hawthorn Tramways Trust #29.	
P	137 PMTT 31 MMTB P137 Bendigo 34		Maximum Traction, Bogie, Drop end and Centre Combination Saloon	Duncan and Fraser 1917	HTT	Transferred to Ballarat 1947	South Australia (AETM)	originally HTT-31, at MMTB takeover became P137, in 1928 re-designated C137, in 1947 was sold to the SECV and became Ballarat No. 34), preserved as Ballarat No. 34 at the at Australian Electric Transport Museum preserved by the Australian Electric Transport Museum SA as Ballarat 34. In March 2006,on loan in Melbourne as part of the heritage fleet.	

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance/ Nomination
P	138 HTT 32 MMTB P138 Bendigo 24		maximum traction bogie drop-end drop-centre combination design	1918, Duncan & Fraser	Hawthorn Tramways Trust	1945 sold to SECV used on Bendigo tourist line as P class 138 from 1972	Melbourne Tram Museum @ Hawthorn Depot.	preserved by the Bendigo Trust as MMTB P138. Formerly HTT #32, in 1928 re-designated C138, then Bendigo #24. Restored to post-war MMTB condition. Ran as Bendigo 24 P138, (originally HTT-32, at MMTB takeover became P138, in 1928 re-designated C138, in 1945 became Bendigo No. 24), preserved as MMTB 138 at the Bendigo Tramways	

3.4 Ex MBCTT Trams (Class S, T) (3 items)






Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance/ Nomination
S	164 MBCTT 11		Single truck drop end open California combination car	Duncan & Fraser Limited in 1916	1916 (MBCTT) taken over by the M&MTB renumber to 164	1962	1963 TMSV (On loan to the Hawthorn Tram Museum)	Single truck drop end open California combination car, but is significantly different in appearance to most other of its era, as constructed with an arch roof. It received no major modifications during its life with the exception of fitting of a standard destination box. Along with T No 180, it is the only surviving ex-MBCTT tramcar. eighteen cars, twelve of which were built for the Melbourne, Brunswick & Coburg Tramways Trust in 1916 (twelve cars numbered 154-165 in M&MTB service) and 1920-22 (six cars numbered 166-171 in M&MTB service).	
S or T?	155?			1919? Duncan & Fraser?			On block in Rosebud – recently discussed re private restoration	Reported at Railpage Australia http://www.railpage.com.au/f-t11355868.htm	
T	180 MBCTT 16		single truck drop-end open combination car	1917 Duncan & Fraser, Brill trucks	1917 (MBCTT) renumbered to M&MTB	1959	1969 TMSV (On loan to the Hawthorn Tram Museum)	Only major modifications was the fitting of a standard destination box. It is an unusual design, being a single truck drop end combination car with arch roof, with a Brill Radiax truck. The Brill Radiax truck has pivoting axles within the truck, which results in a quality of ride comparable to double bogie cars. six cars built in by for the Melbourne, Brunswick & Coburg Tramways Trust. numbered 177-182 in M&MTB service.	



3.5 Ex FTT Trams (Class M) (2 items)




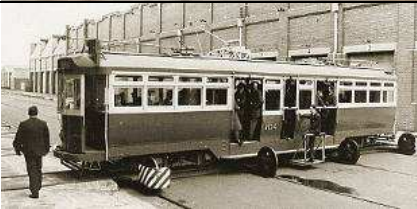

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	
M	184 Ballarat 31			1920	FTT		Perth PETS	preserved by the Perth Electric Tram Society as Ballarat 31.	
M	185 Bendigo 10 Bendigo 19		California combination	Duncan and Fraser 1917	1919 FTT / M&MTB ordered by FTT but delivered to MMTB	sold this time to the SECV Bendigo Tramways in 1935	Bendigo	<p>preserved by the Bendigo Trust as Bendigo 19. originally ordered for the Hawthorn Tramway Trust it could not be delivered until 1918, because the electrical components could not be obtained due to the WW1.sold to the newly established Footscray Tramways Trust in 1919, but did not operate for that company, because the FTT had not opened its tramways due to an unavailability of power supply. Bendigo converted it to one-man configuration as #19.</p> <p>In September 1972, The Bendigo Trust converted the tram back to its former California combination configuration, using components from scrapped former SECV Bendigo tram #10. In October 2003, out-shopped sporting a new coat of paint and the installation of unique lead-lights commemorating the history of the tram.</p>	
M	188			1920 Malcolm Moore Malvern	FTT		Bendigo	Numbers 107-116 built for the Hawthorn Tramways Trust (HTT) and originally numbered 1-10. Trams 183-189 were built for the Footscray Tramways Trust (FTT) but entered service after the formation of the MMTB in 1920. Unlike trams 107-116, trams 183-189 are 10 metres in length. preserved by the Bendigo Trust as Bendigo 21.	
M	189 (Ballarat 33)			1920		Transferred to Ballarat 1933	Ballarat	Preserved at Ballarat Tram Museum	

4. M&MTB Trams





4.1 Q, R, X, X1, X2, Y, Y1, & L Class Trams (23 items)





Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
Q	139		Ex single truck straight sill combination car, converted to scrubber	MMTB 1920			Old Canberra Tram Company	preserved by the Old Canberra Tram Company as MMTB Q139. at Kew Depot 1997, http://www.flickr.com/photos/24447011@N02/with/4343571200/ twenty-four cars built by the M&MTB at its Holden Street Workshops in 1922 and 1923. numbered in two blocks: 139-150 and 190-201. The twenty Q class cars converted for use as one-man cars were 139-150, 191-193 and 196-200.	
Q (G?)	176						Private house in Thornbury		
Q	197 9W	See scrubber car 9W service car			Scrubber 9W	Q197, converted as scrubber car 9W	at the Hawthorn Tram Depot	Preserved at Hawthorn? As 9W	
Q	198 15W	See 15W service car			1958, Welding car 15		TMSV Bylands	Became sleeper car in 1959, renumbered 15W	
Q	199 16W		Single-truck straight-sill, closed combination car	Malcolm Moore	1923 (MMTB),		TMSV Bylands	1959 Converted to Wheel Transport Car No.16 later 16W (MMTB) Current Restoration Projects returned to original M&MTB scheme	
Q	201		Single-truck straight-sill, closed combination car	MMTB 1923	1923, later G class	Withdrawn 1955	In private house in 148 Hutton St Thornbury	An historic 201 Melbourne tram from the 1920s in the backyard of a house for sale at 148 Hutton Street, Thornbury. Sydney Morning Herald Alexandra Roginski March 2, 2010	
R	153 FNPTT 3 Bendigo 22		single truck straight sill closed combination design	James Moore & Sons in 1920	FN&PTT 1920 Reclassed and Renumbered: R 153 for MMTB	transferred to Bendigo 1936	Awaiting restoration Bendigo Tram Museum	The R class were very similar in appearance to the Q class, built for the Fitzroy, Northcote & Preston Tramways Trust by James Moore & Sons in 1920. In M&MTB service they were numbered 151-153 and 172-176. The four R class tramcars converted for use as one man cars were 151 and 174-176. unique to Bendigo as the only single truck tram of this design to operate here. The tram saw little use as unpopular with passengers because of its high steps. Scrapped in 1956 and the body was used by a Bendigo resident as a wood shed. In 1995, eventually retrieved and placed in storage for future restoration.	
X	217		Single truck Birney car	Birney	imported from the United States in 1923. 1924	February 1957	1963 TMSV (On loan to the Hawthorn Tram Museum)	One of two Several thousand were constructed in the USA between 1915 and 1926, only a few survive today. Birneys were designed to provide a tram which was cheap to construct and could be operated economically on low density routes by one man. Birneys were the first Melbourne trams with air operated doors. mainly used on the Hawthorn and Point Ormond routes, and all over Melbourne as an all-night car.	
X	218						TMSV	preserved by the TMSV.	

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
X!	466		Single truck saloon car	1926			Newstead Tramcars restored 2006	Offered for sale to US or other tram company	
X1	467		Single truck saloon car	Birney	1928 one of ten trams build by the M&MTB	1962	1963; at Bylands since 1971	Isolated Footscray tramway system. They were basically a copy of the Birney tramcars imported in 1923, the major difference being the rear door on each side of the tramcar, along with upholstered seats. It spent some time on the main system between 1954 -7 as an all-night car. withdrawn on closure of the Footscray system on 10 March 1962. It has been at Bylands since 1971, with the occasional trip back to Melbourne for tours.	
X2	674						TMSV Bylands	preserved by the TMSV as X2 680.	
X2	676		M&MTB copy of the Birney Safety car	1930 at Preston Workshops			Melbourne Tramway Museum @ Hawthorn Depot	preserved as part of the PTC Heritage Tram fleet.	
Y	469			1927 MMTB			Melbourne Tramway Museum @ Hawthorn Depot	preserved as part of the PTC Heritage Tram fleet. built in 1927 by the Melbourne & Metropolitan Tramways Board (M&MTB) at Preston Workshops as an experimental car for tourist services,	
Y1	610		Bogie Peter Witt saloon car	MMTB) Preston Workshops		withdrawn and used for driver-training duties 1965	Bendigo talking tram PTC Heritage Tram fleet	preserved as part of the PTC Heritage Tram fleet. History: Introduced to service in 1930 and based on the Peter Witt design - which originated in Cleveland, Ohio in 1915, placed in storage during the late 1990s and was transferred to Bendigo in March 2005.	
Y1	611		Bogie Peter Witt saloon car				PTC Heritage Tram fleet	preserved as part of the PTC Heritage Tram fleet.	
Y1	612		Bogie Peter Witt saloon car	M&MTB at Preston Workshops	1930	1990 (1965 from regular service)	2005 Bylands (On loan from the State Government)	Double-ended version of the Peter Witt design from Cleveland in 1915.designed primarily to reducing fare evasion, with passengers boarding via the front door and exiting via the central door. Meaning every passenger had to pass a conductor behind the driver. The union object to its potential for one man operation. After withdrawal in 1965,used when there was a car shortage and for driver training during 1982-90.	







Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
Y1	613		Bogie Peter Witt saloon car	1930 M&MTB			Melbourne Tramway Museum @ Hawthorn Depot	preserved as part of the PTC Heritage Tram fleet.	
L	101		Bogie drop-centre saloon car	1921 James Moore,	1921 (P&MTT) delivered in 1921 to the M&MTB.	1980 (1969 from regular service)	1982 TMSV Bylands	Second type of four motor drop centre used in Melbourne (the first being the VR drop centre cars, No. 34 is the TMSV's example). The drop centre was rebuilt from a four door format into the standard W2 three door form. This class of tramcars was the widest used in Melbourne, and were used as the basis for the W class design.	
L	102		Bogie drop-centre	1921 James Moore,			Canberra	Body only preserved by the Old Canberra Tram Company.	
L	103		Bogie drop-centre	MMTB 1921	1921	1969,	Melbourne Tramcar Preservation Association, Haddon	Ordered by PMTT but delivered to MMTB	
L	104		Bogie drop-centre	James Moore and Sons, 1921	3 June 1921 (P&MTT)	1969,	Melbourne Tram Museum @ Hawthorn Depot. VicTrack	The L class cars are significant in the tramway history of Melbourne for a number of reasons. They were designed and ordered by the largest of the pre-M&MTB municipal tramways trusts, the P&MTT. Their design was used as the basis for the M&MTB W class design of 1923, although that design was significantly simplified for effective mass production through elimination of curved sides and quarter windows. They were also the widest trams ever used in Melbourne, and the last trams designed before the founding of the M&MTB to be used in passenger traffic in Melbourne.	State – precursor and model for W class VHR
L	106		Bogie drop-centre	James Moore and Sons, 1921	14 September 1921, (P&MTT)	1969 allocated in 1981 to Essendon Depot for use on the Zoo special Sunday service, withdrawn 1990s	Melbourne Tram Museum @ Hawthorn Depot. VicTrack	allocated to four different depots during its years of service, namely Malvern, Glenhuntly, South Melbourne and Essendon. after the takeover of the P&MTT by the Melbourne & Metropolitan Tramways Board. classified into the L class roster and numbered 106. The history of the tramcar was very like that of its sister car L 104.	

4.2 W Class Trams (73 items)

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
W	220		Bogie drop-centre saloon car	M&MTB Holden Street Workshops in North Fitzroy.	1923	Converted to W2 Class: 1928	1982 TMSV Bylands	One of two prototype W class trams, formed the basis of the internationally recognised symbol of Melbourne, the W class tramcar, over 750 W's were built. They were designed to be easily mass produced, due to the conversion of cable tram lines to electric and a planned massive expansion of the Melbourne system which unfortunately did not eventuate. All 200 W class tramcars were converted to the W2 style drop centre between 1928 and 1933.	State – earliest surviving W class? VHR
W	245						Sydney Tram Museum	preserved by the Sydney Tram Museum as W2 245.	
W	294						South Australia AETM	preserved by the Australian Electric Transport Museum SA as W2 294.	
W	329						Perth PETS	preserved by the Perth Electric Tram Society as W2 329.	
W	354						South Australia AETM	preserved by the Australian Electric Transport Museum SA as W2 354.	
W	357						MTPA Haddon	preserved by the MTPA as W2 357.	
W	368						Perth PETS	preserved by the Perth Electric Tram Society as W2 368.	
W	370						Sydney Tram Museum	preserved by the Sydney Tram Museum as W2 370.	
W	380		Bogie drop-centre saloon car	M&MTB's Holden Street Workshops	Christmas Day 1925. South Melbourne, Malvern and Kew Depots		1988 restored Melbourne Tram Museum @ Hawthorn Depot	Produced as one of 200 trams constructed to the original W class design for the M&MTB between 1923 and 1926. built by the M&MTB's Holden Street Workshops and entered service on Christmas Day 1925. These cars were designed to be easily mass-produced, and formed the basis of what was to become the internationally-recognised symbol of Melbourne, the W type tramcar, which proliferated into twelve different major versions and over 750 vehicles.	State – best condition original configuration W class? VHR
W2	392						Sydney	preserved by the Sydney Tram Museum as W2 392.	
W	393						Perth PETS	preserved by the Perth Electric Tram Society as W@ 393.	
W	407						Haddon	preserved by the MTPA as W2 407.	
W1	421 Bendigo 31		Bogie drop-centre saloon car	M&MTB.	1927	Purchased by The Bendigo Trust in 1985	Bendigo	In W2 configuration when purchased, stored at the Gas Works Depot before being converted to W1 configuration in 2000. painted in the corporate livery of the "Rivers" footwear company and operated in this livery until 2004. The tram was repainted in the corporate livery of "Centro" promoting the Lansell Plaza shopping complex at Kangaroo Flat.	
W1	426		Bogie drop-centre saloon car				Perth PETS	preserved by the Perth Electric Tram Society as SW2 426.	




Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
W1	427		Bogie drop-centre saloon car	M&MTB.	1927	Converted to W2 Class: 1937	1985 TMSV Bylands	The W1 was open in the drop centre with two longitudinal flip over seats. This was to provide comparable loading times to the cable trams, and provide a tramcar which would be more popular during summer months. The design was unsuccessful, compromising safety in traffic, and was unpopular during winter due to its open sides. Subsequently all W1 class tramcars were converted to W2 class or SW2 class trams. reconverted to a W1 at Preston Workshops in 1986, courtesy of a Victorian State Government grant to commemorate 100 years of trams in Melbourne.	
W1	431			M&MTB	13 June 1927	May 1988 reconverted back to original form as a W1	Melbourne Tram Museum @ Hawthorn Depot.	One of the W class tramcars was completed in 1925 with an open drop centre and longitudinal flip-over seats. This design showed some promise, so another 29 cars were built by the Melbourne & Metropolitan Tramways Board (M&MTB) to the same design between 1925 and 1928, all 30 cars being classified as W1 class trams. W1 431 entered service on 13 June 1927, and it spent its life at Coburg, Kew, Preston and South Melbourne Depots.	State – new configuration W class VHR
W1	432						Sydney	preserved by the Sydney Tramway Museum as SW2 432.	
W1	470						Bendigo	preserved by the Bendigo Trust as W2 470.	
W1	471						Sydney	preserved by the Sydney Tram Museum as W2 471.	
W2	323		Bogie drop-centre saloon car		1925 as a W Class(323),	1986(323),	Bylands (323 on loan from the State Government),	One of Four W2 class trams at Bylands, three being built as W2's and one converted from a W. For fifty years the W2 class was the dominant type in use on the Melbourne system, with a total number of 406 tramcars, both as built and conversions from other types. They were introduced in the mid to late 20's with most being phased out of service in the 80's, 646 was the last W2 in service being retired in 1988 after 60 years of service.	
W2	325			Holden Body Builders of Woodville, South Australia		1961 stripped down for training at Hawthorn Depot	Melbourne Tram Museum @ Hawthorn Depot.	One of 200 trams produced to the original W class design between 1923 and 1926.built by Holden Body Builders of Woodville, South Australia, and entered service on 28 February 1925. The history of this tramcar was very similar to that of its sister car W 380, and during its service allocated to Kew, Malvern and Camberwell Depots. Like all other W class cars, it too was converted to a W2 class car between 1928 and 1933. However, during 1960 it suffered significant damage from a fire and was not restored to operational condition. Instead, most of the body was removed from the chassis of the car. This was disassembled and then reassembled in the driver training room at Hawthorn Depot as an operating instructional frame, being used to train drivers in the basics of tramcar operation and fault diagnosis.	







Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
W2	357		converted to a W2 class tram in the early 1930's	MMTB Holden St Tramway Workshops	30 January 1926	18 November 1968.	Melbourne Tramcar Preservation Association, Haddon 18 April 1977	Entered service on the 30 January 1926, built by the MMTB, last tram to be entirely constructed at the Holden St Tramway Workshops. Subsequent trams built by the Tramways Board were constructed in their entirety at Preston Workshops.	
W2	407		Bogie drop- centre saloon car	MMTB			Melbourne Tramcar Preservation Association, Haddon		
W2	441		Bogie drop- centre saloon car	M&MTB Preston 1927	1927		Bendigo	preserved by the Bendigo Trust. On loan and in service at Perth Electric Tramway Society (PETS), Whiteman Park, Western Australia. painted during M&MTB operation to commemorate the 150th anniversary of the founding of the State of Victoria, and still retains this livery.	
W2	447		Bogie drop- centre saloon car				Sydney	Sydney Tramway Museum.	
W2	456		Bogie drop- centre saloon car	M&MTB Preston			Bendigo	preserved by the Bendigo Trust. Purchased by The Bendigo Trust in September 1988. Has operated in Melbourne as part of the Moomba Tram Cavalcade.	
W2	509		Bogie drop- centre saloon car		1928(509),	1984(509),	(509; on loan from John Spiegelman),	One of Four W2 class trams at Bylands, three being built as W2's and one converted from a W. For fifty years the W2 class was the dominant type in use on the Melbourne system, with a total number of 406 tramcars, both as built and conversions from other types. They were introduced in the mid to late 20's with most being phased out of service in the 80's, 646 was the last W2 in service being retired in 1988 after 60 years of service.	






Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
W2	510		Bogie drop-centre saloon car	James Moore and Sons South Melbourne	8 June 1928. Kew, South Melbourne and Malvern Depots		1988 restored Melbourne Tram Museum @ Hawthorn Depot	Built as one of 180 trams constructed to the W2 class design for the M&MTB between 1927 and 1931, to support the conversion of the cable tram system to electric traction, and to support the expansion plans of the M&MTB. A further 200 trams were converted from the W class design to the W2 design between 1928 and 1933, and another 26 trams were converted to the same design from the W1 class tramcars between 1936 and 1937.	
W2	522						TMSV Bylands	preserved by the TMSV.	
W2	577						Sydney Tram Museum	preserved by the Sydney Tram Museum.	
W2	600						PTC Heritage Tram fleet	preserved as part of the PTC Heritage fleet.	
W2	643		Bogie drop-centre saloon car		1930	1986	TMSV	One of Four W2 class trams at Bylands, three being built as W2's and one converted from a W. For fifty years the W2 class was the dominant type in use on the Melbourne system, with a total number of 406 tramcars, both as built and conversions from other types. They were introduced in the mid to late 20's with most being phased out of service in the 80's, 646 was the last W2 in service being retired in 1988 after 60 years of service.	
W2	644		Bogie drop-centre saloon car		1930	1986	TMSV Bylands	One of Four W2 class trams at Bylands, three being built as W2's and one converted from a W. For fifty years the W2 class was the dominant type in use on the Melbourne system, with a total number of 406 tramcars, both as built and conversions from other types. They were introduced in the mid to late 20's with most being phased out of service in the 80's, 646 was the last W2 in service being retired in 1988 after 60 years of service.	
W2	646		Bogie drop-centre saloon car		1930	1986	Bylands (on loan from the State Government) PTC Heritage Tram fleet	One of Four W2 class trams at Bylands, three being built as W2's and one converted from a W. For fifty years the W2 class was the dominant type in use on the Melbourne system, with a total number of 406 tramcars, both as built and conversions from other types. They were introduced in the mid to late 20's with most being phased out of service in the 80's, 646 was the last W2 in service being retired in 1988 after 60 years of service.	
W3	656		Bogie drop-centre saloon car	MMTB	1930c.		Melbourne Tramcar Preservation Association	<i>forms the centre portion of the General Manager's residence Haddon</i>	
W3	661		Bogie drop-centre saloon car	MMTB			Ballarat	preserved by the Ballarat Tram Museum.	

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
W3	663		Bogie drop-centre saloon car	MMTB			Melbourne Tramcar Preservation Association, Haddon	preserved by the Melbourne Tramcar Preservation Association. Restored at Bendigo? this former Melbourne & Metropolitan Tramways Board W3 built in 1931 is now owned by the Melbourne Tramcar Preservation Society (MPTS). It is undergoing a roof replacement.	
W3	667		Bogie drop-centre saloon car	M&MTB at Preston Workshops,	1934	1976	1976 TMSV Bylands	One of 16 cars built over five years. Building time was extended by the depression. To reduce building costs, wheel and axle sets from scrapped single truck tramcars were used and plywood used for the roof. These were the first tramcars built by the M&MTB to have a completely steel frame. The W3 design was unpopular with both passengers and drivers. All remaining W3 tramcars were withdrawn in 1969 due to union opposition. This tramcar was the first to operate under power at Bylands.	
W3	668						Sydney	preserved by the Sydney Tramway Museum.	
W4	670		Bogie drop-centre saloon car	MMTB			Melbourne Tramcar Preservation Association, Haddon		
W4	670						Haddon	preserved by the Melbourne Tramcar Preservation Association.	
W4	671						Ballarat	preserved by the Ballarat Tram Museum.	
W4	673		Bogie drop-centre saloon car		1934	1968	1976 TMSV Bylands	Decorated & illuminated for the Centenary of Victoria in 1934, for the Silver Jubilee of King George V in 1935, & for the Jubilee of the City of Preston in 1935. The unpopularity of the W3 lead to the reduction in the order of 20 W3 tramcars to 16. This tramcar was one of the last four, built to a modified design; W4, the order was extended five. They were a wider tramcar, set lower, leading to a reduction in step height. The seating departed from longitudinal saloon seats. They proved unpopular to drivers, as they had the poor braking of the W3's, which led the union to press for their withdrawal, which was done in 1968.	
W4	674						Perth	preserved by the Perth Electric Tram Society>	
W5	739		Bogie drop-centre saloon car	1935 as W5M&MTB Preston Workshops	Modification to SW5: 1976 & 1986	1993)	TMSV Bylands (on loan from the State Government	Additional 5 tramcars being converted from CW5's. The W5 was the final of the three door, canvas blind W's. All subsequent W's were sliding door trams. In 1976 this tramcar was involved in a W5 upgrade plan, closing the narrow centre doorways and installing upholstered seats in the drop centre. upgraded in 1986 as part of a program to convert W5 tramcars to SW5 class, involving a rebuild, including sliding doors. preserved by the TMSV as SW5 739.	
W5	759						PTC Heritage Tram fleet.	preserved as part of the PTC Heritage Tram fleet.	
W5	762						Sydney	preserved by the Sydney Tramway Museum.	
W5	766						Perth	preserved by the Perth Electric Tram Society.	




Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
W5	774		Bogie drop-centre saloon car	M&MTB Preston Workshops in 1936	1936		PTC Heritage Tram fleet. Melbourne Tramway Museum @ Hawthorn Depot	preserved as part of the PTC Heritage Tram fleet.	
W5	782		Bogie drop-centre saloon car		1936	Unknown	1991 Bylands (on loan from the State Government) TMSV?	Built as a W5 class tramcar. As such, similar to its sister tramcars in the Society's museum, Nos 739 and 795, but received no major modifications during its lifetime, remaining as a three door W5 canvas blind tramcar until its withdrawal. The only modifications it received were replacement during the 1960's of the original square cornered drivers windshields with round cornered windshields with half drop windows, as fitted to SW5 class and later tramcars, together with application of marker lights in the 1970's.	
W5	792		Bogie drop-centre saloon car				Sydney	preserved by the Sydney Tram Museum.	
W5	795		Bogie drop-centre saloon car		1937	Unknown	1991 Bylands (on loan from the State Government) TMSV?	Similar history to 782 until 1975, when it received the modification to two door status, as also occurred to No 739. In 1986, to become the 84th mid 1980's conversion to a SW5, but the program was halted after some minor work was carried out. It then reverted back to its status as a two door W5.	
W5	808		Bogie drop-centre saloon car	1937 M&MTB Preston Workshops.			Bendigo	<p>preserved by the Bendigo Trust as SW5 808. Bendigo On 31st July 1991, painted in the Bendigo Trust livery and operated as a talking tram before returning to Melbourne in October 1995 to operate on the 'City Circle' route. The tram returned to Bendigo on 16th December 1996. In March 2004, repainted in the livery of the SECV 1972.</p> <p>During June 2006 withdrawn from service and repainted in the corporate livery of</p> <p>Hume & Iser (Home Hardware). It re-entered service as a talking tram on 31st August 2006.</p>	
W5	821			M&MTB			PTC Heritage fleet	preserved as part of the PTC Heritage fleet.	
W6	996		Bogie drop-centre saloon car	1955 M&MTB Preston Workshops.	1955	1991	1991 Bylands (on loan from the State Government) (TMSV?)	Originally classified as an SW6 type tramcar, reclassified as a W6 following its reequipment along with 29 other SW6's with resilient wheels, double helical gears and sound proofing as in the W7 class, for service on Bourke Street routes. Until the introduction of Z class tramcars in 1975, W6's were restricted to the Bourke Street routes, which were regarded as the premier routes in Melbourne and were served exclusively by the newest tramcars until the introduction of A class tramcars in 1984.	

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
W7	1001		Bogie drop-centre saloon car		1955	1991	1991 Bylands (on loan from the State Government)	Class leader of the W7's, the culmination of thirty three years of W design. W7's were built for the conversion of the Bourke Street routes from bus to tram. The original order was for 70 W7's, but was reduced to 40 due to a change of state government, and resulting change in policy. These tramcars were made as quiet as possible, due to objections that trams were noisy. They were fitted with resilient wheels, double helical gears and soundproofing. They had fully upholstered seats. W7 trams served almost exclusively on the Bourke Street routes until 1975.	
SW2	275 Bendigo 33		Bogie drop-centre saloon car	James Moore & Co (1925)			Bendigo Trust	<p>preserved by the Bendigo Trust as SW2 275. After being involved in a severe accident in 1955 given a major upgrade to its present configuration as one of two prototypes for the mass conversion of the W2 class fleet</p> <p>one of the first to be painted in TBT livery (operating with its former MMTB #275), because the sliding doors would facilitate the use of the tram for one-person operation, and the tram could also be used for parties etc.</p> <p>In 2003 painted in corporate colours of Bendigo Community Telco and resumed operation at Bendigo as #33.</p>	
SW2	644		Bogie drop-centre saloon car	1930	1953 (converted from W2 Class)	1987	1987 Bylands (On loan from the State Government) MSV?	This tramcar was built in 1930 as a late series W2 type tramcar. However, in the early 1950's seriously damaged in an accident and placed out of service. In 1953 radically rebuilt to as a sliding door saloon car, basically modelled on the W7 class then being designed, and classified as an SW2 class. intended to be the prototype for the mass conversion of all W2 type tramcars to this format, this did not proceed due to high cost of conversion and lack of finance.	
SW5	829					Painted 1978	Stored at Newport Workshops.	Lin Onus	
SW5	840			M&MTB			PTC Heritage fleet	preserved as part of the PTC Heritage Tram fleet.	
SW5	849		Bogie drop-centre saloon car	MMTB			Melbourne Tramcar Preservation Association, Haddon		
SW6	850			M&MTB			PTC Heritage Tram fleet	preserved as part of the PTC Heritage Tram fleet.	
SW6	880		Bogie drop-centre saloon car	M&MTB	between 1939 and 1951.	placed in storage during the late 1990s as part of the "reserve fleet" and was transferred to Bendigo in March 2005.	Bendigo Tramways	Restored for operational use – painted livery Oct 2010	





Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
									
SW6	887		Bogie drop-centre saloon car	M&MTB Preston Workshops	1943	Unknown	1994 Bylands (on loan from the State Government)	One of 120 SW6's These tramcars were a notable advance over previous W type tramcars, fitted with sliding doors and making greater use of steel in their construction. These tramcars were built with dash canopy lighting, instead of the standard central headlight, this design was unsuccessful, and all SW6's were later modified to the standard headlight. The first 40 SW6's had flip-over seats in the end saloons. Most other SW6 type tramcars, including this one, were modified in the mid 1970's, to the same seating layout as initial SW5's, but with brown upholstery and extensive use of laminex in the interior.	
SW6	900			M&MTB			PTC Heritage Tram fleet	preserved as part of the PTC Heritage Tram fleet.	
SW6	902		Bogie drop-centre saloon car	1945 by the M&MTB Preston Workshops	1945	Unknown	1991 Bylands (on loan from the State Government)	Similar history to No 887, but fitted with bus type seats in the saloons rather than flip over seats. This tramcar is the only sliding door tramcar to retain its interior unmodified in as built condition, retaining saloon bus type seats with green upholstery and wooden drop centre seats. All other sliding door tramcars built by the M&MTB were modified to some extent.	
SW6	918		Bogie drop-centre saloon car	M&MTB			Bendigo	The tram was placed in storage during the late 1990s as part of the "reserve fleet" and was transferred to Bendigo in March 2005. Repainted in 2006 as the Department of Sustainability and Environment corporate tram.	
SW6	976			M&MTB Preston Workshops 1952		Withdrawn from service as an advertising tram for Australia Post by the PTC in May 1996,		arrived in Bendigo in July 1996 converted for use as the Cafe Tram and entered service in 1999. To view the tram in its "Cafe Tram" livery During 2007re-commissioned as a "Restaurant Tram". This new service was marketed as "Bendigo nine seven six - Bendigo's Restaurant on wheels".	
W7	1040		Final development of the base W type design	1956 at Preston Workshops	1956	withdrawn from service in 1996	PTC Heritage Tram fleet Melbourne Tramway Museum @ Hawthorn Depot	Last W class to be commissioned -.Its last allocation was Sth Melbourne Depot. placed in the Heritage Fleet. preserved as part of the PTC Heritage Tram fleet. (last of the line?)	

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
W5		   	Bogie drop-centre saloon car (bodies only)					<p>Wattle Park</p> <p>Body set up as picnic shelter in Wattle Park – original cable tram bodies, then W’s replaced with W5 in 2008 after destroyed by arson in 2005?</p> <p>A tram was again destroyed by fire in January 2012</p>	
W	class mothballed fleet (was 300) see below		Bogie drop-centre saloon car	1923? - 1956				<p>Approximately 150-200? later model W class trams in storage at former Newport Railway Workshops east block, and Preston Tramway workshops.</p>	



4.3 Restaurant W Class trams (3 items)

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
SW6	928						Colonial Tramcar Restaurant		Heavily modified late W class
SW6	937						Colonial Tramcar Restaurant		Heavily modified late W class
SW6	939						Colonial Tramcar Restaurant		Heavily modified late W class




4.4 Z Class (4 items)

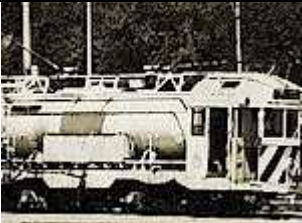






Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
Z1	108						PTC Heritage Tram fleet Melbourne Tramway Museum @ Hawthorn Depot Bylands	Prototype for Z class	Prototype of first new tram design for 25 years – introduction of all metal bodies and modern European style.
Z1	5		All-electric bogie car	1975 based on the Peter Witt style Gothenberg M28 tram, similar to PCC 1041, built by Comeng.	1975	2003	Melbourne Tramway Museum @ Hawthorn Depot 2003 TMSV Bylands	First series of new trams since 1955. fitted with conductor's consoles, to allay union fears of one man operation. The introduction of heating was popular. This tram was used to test modifications to improve ride quality. The modifications were successful, with all Z's modified and reclassified Z1. Z's 1-5 entered service on 30 April 1975, on the Bourke St routes, the first to be converted to Z class operation.	Representative of class and in preservation collection
Z1	11		Four Motor Tram	1977 COMENG, Dandenong	1977 M&MTB	Retired from Glenhuntly depot November 2002.	Bendigo Tramways	Donated to the Bendigo Tramways by M Tram, Melbourne. Arrived in Bendigo December 2002. Builder:, Victoria, Australia	Representative of class and in preservation collection
Z1	74		Four Motor Tram	COMENG, Dandenong	1977 M&MTB	Retired from Glenhuntly depot November 2002.	Bendigo Tramways	In service and operating as a shuttle and charter tram. Donated to the Bendigo Tramways by M Tram, Melbourne. Arrived in Bendigo 22nd November 2002.	Representative of class and in preservation collection

4.5 Prototypes (2 items)

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
PCC	980		2 door, bogie saloon car	MMTB Preston Workshops	1950	May 1971	1982 donated on unpowered trucks to TMSV Bylands	In 1938 the M&MTB obtained the Australian licence to import PCC patented technology and proposed to import a PCC tramcar for evaluation in Melbourne. In 1949 PCC trucks and control equipment was imported, instead of a complete PCC in 1950 to make a hybrid car with a locally produced, modified SW6 body mounted on St Louis B3 trucks powered by General Electric controls. to be the prototype for tramcars built for the conversion of Bourke Street bus routes to electric tram routes, but this did not eventuate due to financial constraints. withdrawn from service in 1971, later having equipment removed for the Z class prototype. http://tdu.to/134719.msg	Early attempt at modernising fleet by assessing overseas standards – Presidents Conference Committee PCC trucks on modified W body. VHR
PCC	1041		2 door, bogie saloon car	1973 MMTB Preston Workshops	1973	1985	PTC Heritage Tram fleet Melbourne Tram Museum @ Hawthorn Depot	preserved as part of the PTC Heritage Tram fleet.	First prototype for future Z Class introduced European design and technology. VHR

4.6 Service Stock (9 items)




Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
W2	325		W 325. (HS)	28/02/1925 and converted to W2 class in October 1931.	Hawthorn Depot school	Camberwell Depot	Melbourne Tram Museum @ Hawthorn Depot	destroyed in a fire on 16/12/1959, and the framework was placed in the Conductor's school at Hawthorn Depot	
W2	361 6 W		Scrubber Car	MMTB 1963			Whiteman park? 1986 PETS	MMTB dust suction car 3rd #6 at Whiteman park. Built using the cabs from W2 361 and suction equipment from 2nd #6.Early 1995.	Unusual cannibalised service tram
	7 W (part W2 256 & W2 508) Original 5A		Bogie Tank Car	1920, M&MTB.	1920	1978	1986 TMSV Bylands	Originally built as No 7 first tramcar built by the MMTB. used for flushing and scraping out rail grooves. modified in 1950 with weed killing equipment. In 1964 this tramcar was in a series collision, which resulted in the ends being rebuilt later that year using the end frames and cabins from W2 class tram No 356, together with some parts from W2 No 508.	First tram built by MMTB, but cannibalised for service vehicle

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
									
	8W		Scrubber Car	1934, M&MTB	1934	C1995	Ballarat Tramway Museum acquired 1999	1934 Built by the MMTB as No. 8. 1961 Repainted from green and cream to string and cream, additional lights added. 1975 Renumbered to No. 8W 198? Repainted in "The Met" yellow colour scheme. 199? Withdrawn from regular use and stored at Malvern Depot. 1999 Donated by the Public Transport Corporation to the Ballarat Tram Museum. 2000 Recommissioned, with some of the MMTB additional lights removed. 2005 Repainting in MMTB green and cream livery completed.	
	10 W (Sydney K 763)		Scrubber Car	Meadowbank Manufacturing Company in 1908	1908 as K Class No.763 (Sydney) M&MTB 1959	2002 (M>Tram)	2002 TMSV Bylands	Built for the Sydney tramway system. Originally a semi-enclosed, cross-bench tram; Sydney K class No 763. In 1952 converted to a scrubber tram in the Sydney works fleet. Serving briefly in Sydney before being purchased (along with sister car), by the M&MTB in 1959. In Melbourne repainted and renumbered No 10.repainted in cream with black "zebra" stripes in the mid 1960's. In 1975renumbered 10W, to prevent confusion with Z class trams. overhauled in 1979, and repainted to its current colour scheme in 1988.	
	11W Scrubber		Scrubber Car	Meadowbank 1908	1908, Sydney K797	2000	?	Sydney K797, Still in use in Spencer St 2000, Shortly after 10W was withdrawn, this made 11W was the oldest vehicle operated by any public transport company in Australia. http://www.flickr.com/photos/24447011@N02/4406483116/	oldest vehicle operated by any public transport company in Australia in 2000 and longest operated non tourist vehicle
Q	197 9W		4 wheel scrubber	1923, Malvern, 1959 M&MTB	1923, then all nite tram 1937	withdrawn as a passenger tram in 1958	transferred to the Bendigo Tramways 1999 and has been used regularly as a scrubber.	former Q class car #197.converted to an 'all night tram' in 1937.initially converted to a 'blow-down' car and later became scrubber #9 (9W). During early 2007, repainted in The Bendigo Trust livery and will carry advertising on	
Q	198 15 W		Sleeper Transport Car	M&MTB Holden Street Workshops.	1923 as Q Class No.198	1986	1986 TMSV Bylands	design was a single truck straight sill closed combination car. modified in 1936-7 for use as all night cars. When all night services ended in 1957stored, and in 1959 converted to a freight car, renumbered as No 15.primarily used for transporting sleepers, other equipment, and as a locomotive for hauling No 24. In 1975fitted with a light capacity crane for moving machinery and equipment around areas of depots that were inaccessible by other vehicles, and renumbered 15W.	
	No.1 (6A)		Rail Grinder	Austral Otis in 1929	1928	1971	1971 TMSV Bylands	Used to grind corrugations from rails and smooth newly laid track. Originally numbered 6A, renumbered in 1934 as No 1. It consists of a powered truck and a grinding trailer, all under one roof. Power to the grinding trailer is transmitted from the powered truck. This tramcar and its sister, No 2 were generally used at night. Both were involved in accidents in 1969, resulting in the scrapping of No 2, it's trailer being transferred to No 1.	





4.7 Transporting Art Painted W Class Trams¹ (36 items)




Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
W2	525		Transporting Art		29/6/1928	Painted 1987	Seattle, USA	Les Kossatz - white with little sheep all over it. sold to the City of Seattle, USA, and repainted in MMTB livery, http://www.theage.com.au/articles/2002/06/07/1022982759728.html sold in full working order on 4/12/1987 to the Gomaco Trolley Co. of Ida Grove, Iowa USA, who resold the body to King County Metro Transit, Seattle USA where it is Currently stored at their repair shops in Tukwila Washington, about 30 km from Seattle.	
W2	607		Transporting Art		29/3/1930.	Painted 1987		Painted by Craig Gough.. sold on 26/11/1987 to a buyer in Brooklyn Vic. The electrics went to America in 1989 and the body in March 1991.	
W	243		Transporting Art			Painted 1987	Privately owned	Mirka Mora, now on a private property on the Mornington Peninsula;	Important Melbourne artist
W	345		Transporting Art				Diggers Rest.	Gareth Sansom, a former dean of the Victorian Council of the Arts, was last seen derelict in Diggers Rest.	
W	384		Transporting Art			Painted 1980	Privately owned since 1997	Howard Arkley, http://www.architecturemedia.com/aa/aaissue.php?issueid=200705&article=5&typeon=1 , Chris Treganowan's Heritrack Trust, which has eight other historic W-class and S-class trams under restoration in a bush workshop at a location he asks to remain secret. According to http://www.reocities.com/z_class/wclass2.html sold to Paul Class of Gales Creek Enterprises in the USA. Its electrics went to America in 1989 and the body followed in 1991.	Important artist, tram recovered and preserved privately for artistic value
W2	497		Transporting Art		16/3/1928.	Painted 1979	Seattle, USA	Erica McGilchrist sold in full working order on 3/12/1987 to Gomaco Trolley Co. of Ida Grove, Iowa USA.	
W2	497		Transporting Art				Rotting in paddock near station at Nambucca Heads 2005.	“Pop Art” tram “Mother Knows Best”	
W2	502		Transporting		23/4/1928.	painted 1981	demolished.	Rosemary Ryan’s sold on 4/12/1978 to a buyer in Brooklyn Vic	

¹ Trams -- Decoration. : Australian Gallery File, File contains material relating to the painted trams in Melbourne from the late 1970s to 1993. 39 artists painted 36 trams. Colour illustrations of painted trams 1978-1982 by Howard Arkley, John Nixon, Stewart Merrett, Rosemary Ryan, Gareth Sansom, Clifton Pugh, Craigh Gough, Trevor Nicholls, Peter Corrigan, Mirka Mora, Paul Mason, Mike Brown, Erica McGilchrist, Les Kossatz, Don Laycock, Andrew Southall. <http://catalogue.slv.vic.gov.au/vwebv/holdingsInfo?bibId=1268509>, also PROV Transporting Art Program (Painted Tram Project) Collection, Photographs -, VPRS 12620 - P0004 Unit 1




Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
			Art					and was resold to the USA, the electrics going in 1989 and the body in March 1991.	
W2	503		Transporting Art		16/4/1928.	painted in 1981	Seattle, USA	John Nixon. sold on 25/11/1987 to a buyer in Brooklyn Vic. who resold it to a buyer in Green Bay, Wisconsin USA in May 1988.	
W2	504		Transporting Art		18/4/1928	Painted 1987	Hawthorn Depot	Clifton Pugh now part of the Tramways Heritage Fleet; involved in an accident in August 1986 and was repaired at Preston Workshops in May 1990. It is Currently held by the Dept of Infrastructure for the State Museum of Victoria.	In heritage collection? But some panels removed.
W2	567		Transporting Art		9/8/1929.		NSW north coast at Mullumbimby. It is in a timber yard (Prince Street)	Peter Corrigan in 1978 and Paul Mason in 1982. Paint scheme is the pastel daisies that were applied about 1978 after a big hoo-haa about its then "Mother Knows" colour scheme. sold on 1/12/1987 to a buyer in Brooklyn Vic. The electrics went to the Gomaco Trolley Co. Ida Grove, Iowa USA in 1989 and the body is Currently at Mullumbimby NSW in use as an office for "The Old Mill Timberyard", still in its <i>Transporting Art</i> colour scheme.	
SW5	444		Transporting Art		12/9/1927	1981.	Bendigo, Perth	Trevor Nickolls Spotty one? (wgb --- In TramsDownUnder@yahoogroups.com,) Its body was sold on 30/11/1987 to a buyer in Brooklyn Vic. and resold to a buyer in Perth WA. It arrived at Kewdale WA on 22/11/1988 to be installed in a Perth pub's beer garden in their original colours.	
SW5			Transporting Art				Perth	Stewart Merrett installed in a Perth pub's beer garden in their original colours.	
SW5			Transporting Art					Joe Darvall	
SW5			Transporting Art				outer Melbourne	Mike Brown's yellow, red and blue tram, painted in a "splatter" style, is apparently built into a house renovation somewhere in outer Melbourne.	
SW5			Transporting Art				privately owned in Melton.	Don Laycock's neon-coloured tram was, for a time, owned by Hungry Jacks, which repainted it.	
SW5	682		Transporting Art		19/1/1935.		Stored at Newport Workshops.	sponsored by the ABC and painted by Merrin Eirth converted to SW5 class in 1984, Currently stored at Newport Workshops.	
SW5	721		Transporting Art		1936.		stored at Newport Workshops.	painted by Steig Persson. for the Herald and Weekly Times Currently stored at Newport Workshops.	
SW5	722		Transporting Art		1936.	Painted 1986	Stored at Newport Workshops.	- David Larwill for Associated Communications Enterprises	
SW5	723		Transporting Art				Stored at Newport Workshops.	- Theme car	

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
SW5	724		Transporting Art				Stored at Newport Workshops.	- Theme car	
SW5	726	  	Transporting Art		1936	withdrawn & stored at Preston workshops 1/1993.	? Stored at Newport Workshops.	- painted by Jenny Watson. Described as a “short-lived abomination” by Flickr contributor painted by the rock group Mental as Anything for Melbourne FM radio.	
SW5	727	 	Transporting Art		awaits the kids to finish the livery at Preston workshop 1/1992.	Painted by school children withdrawn & stored at Preston workshops 1/1993.	Stored at Newport Workshops.	- promoting public transport.	




Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
									
SW5	729		Transporting Art				Stored at Newport Workshops.	- painted by tram crews.	
SW5	731		Transporting Art		1936.		Stored at Newport Workshops.	- painted by Lesley Dumbrell. W5 731. for Carlton and United Breweries.	
SW5	738		Transporting Art		1935.	Painted 1987	Stored at Newport Workshops.	Desert Tram – painted by Jeff Makin for Dulux Australia.	
SW5	749		Transporting Art				Stored at Newport Workshops.	- painted by tram crews.	
W5	758		Transporting Art		1936.		Stored at Newport Workshops.	- painted by Michael Johnson. for the State Insurance Office. Currently stored at Newport Workshops.	
W5	760		Transporting Art		1936.	Painted 1987? Withdrawn 1992	Stored at Newport Workshops.	Brett Colquhoun VPRS 12620/P3, unit 6, (1992) painted by Robert Jacks for the Focus Group.	
SW5	802		Transporting Art		1937		Stored at Newport Workshops.	Painted by Kim Donaldson for the Challenge Bank.	
SW5	806		Transporting Art		1937		Stored at Newport Workshops.	- painted by Elizabeth Gower and sponsored by Canon Australia.	
SW5	814		Transporting Art		1937		Stored at Newport Workshops.	painted by Phillip Faulks for the National Heart Foundation (Hearthealth).	


Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
SW5	816		Transporting Art		1937	Painted 1978	Stored at Newport Workshops.	- painted by Michael Leunig and sponsored by "The Age" newspaper.– photo Sarah Churchman. http://www.curlyflat.net/cathyspage.htm	Much loved Melbourne cartoonist, one of best known of painted trams
SW5	824		Transporting Art		1938	Painted 1993	Stored at Newport Workshops.	Day In Day Out - painted by Aleks Danko.	
SW5	829		Transporting Art		1938	Post 1992	currently in storage at Newport Workshops	painted by Lin Onus for the National Heart Foundation (Hearthealth). was previously painted as a Transporting Art car painted by Eve Glenn and Megan Evans for the International Year of Peace. zed.fitzhume photo 1992	
SW5	837		Transporting Art		1938	Painted 1993	Stored at Newport Workshops.	- painted by Terry Matassoni for the National Heart Foundation (Hearthealth).	

5. Melbourne Trams overseas (43 items)





Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
M	183 Ballarat 30						Portland Oregon	preserved by the Oregon Electric Railway Historical Society as Ballarat 30.	
M	369?			3/11/1925 James Moore and converted to W2 class in January 1930.	Kew Depot	sold in full working order on 19/8/1986	Dallas, USA	Currently operating on the McKinney Ave. heritage tramway, Dallas, USA. The body was extensively reworked and its first run in Dallas was on 22/6/1989.	
W	234						New Orleans?, formerly Memphis, Tennessee USA	preserved in Memphis, Tennessee. Transferred to New Orleans?	
W	244						Christchurch, NZ	Currently operating in Christchurch, NZ.	
W	272			1925-30			Seattle Washington, USA	Five W class trams sent to Seattle USA. between 1978 and 1993, 2.5 miles long Waterfront Streetcar Line, (route 99) former SW5 Transporting Art Trams by Les Kossatz , Painted 1987, John Nixon & Erica McGilchrist Painted 1979 - sold to the City of Seattle, USA, and repainted in MMTB livery, http://www.theage.com.au/articles/2002/06/07/1022982759728.html the trams have some modifications - the gong (bell) has apparently been supplemented by a horn to satisfy railway laws (which causes a bit of a shock to Australian visitors), and the characteristic drop-centre section has been raised, to suit high platform loading instead of street-level loading. All the cars have undergone total rebuilds, and all except 272 have had the spur gears replaced with helical gears.	
W2	321			1925 Holden, Adelaide, South Australia		1980	MOTAT Auckland 1981,	Built by, for the Melbourne & Metropolitan Tramways Board as a W class. All of this class were later (1928–33) converted to W2 form with three entrances on each side. Length 48ft (14.6m); weight 17 tonne. Equipment: M&MTB 1A bogies; 4–35hp BTH motors; GE K35JJ controllers: hand- and self lapping air-brakes. presented by the Victoria Government in 1981. Ran at MOTAT until 1998 refurbished & returned to service October 2002, now in its 1972–80 form	
W	331.						New Orleans	Two W Class trams used from 1988 on Riverfront Line, city's first streetcar line to offer handicapped access.	
W	336						Iowa, USA	Gomaco Trolley Co, Iowa A number of W2 trams were sold to this company for re-building for the American market Five of these trams have	

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
								appeared in Memphis. (RailPage http://www.walkingmelbourne.com/forum/viewtopic.php?f=11&t=761&start=6)	
W	396						McKinley Ave Dallas		
W	353						Iowa, USA	Gomaco Trolley Co, Iowa	
W2	403						San Jose Cal. USA	San Jose Trolley, downtown loop, - not operational.	
W	417						Memphis, USA	Gomaco Trolley Company reconditioning three melbourne trams in 2001-2, U S Streetcar systems, John Smatlak. For Avenue Transit Authority Memphis Tennessee These were formerly running in New Orleans but now make up over a third of the Memphis fleet, of which most of the rest come from Porto.	
W	452?						Memphis, USA	Gomaco Trolley Company reconditioning three melbourne trams in 2001-2, U S Streetcar systems, John Smatlak. For Avenue Transit Authority Memphis Tennessee	
W	454?						Memphis, USA	Gomaco Trolley Company reconditioning three melbourne trams in 2001-2, U S Streetcar systems, John Smatlak. For Avenue Transit Authority Memphis Tennessee	
W	455?		nine reconditioned Melbourne, Australia type W2 cars				Memphis, USA	Gomaco Trolley Company reconditioning three melbourne trams in 2001-2, U S Streetcar systems, John Smatlak. For Avenue Transit Authority Memphis Tennessee	
W1	478						New Orleans	Currently operating on the Riverfront Heritage tramway, New Orleans, USA.	
W	479						Iowa, USA	Gomaco Trolley Co, Iowa	
W2	482			1925-30			Seattle Washington, USA	virtualtourist.com Currently operating on the Waterfront Streetcar Line, Seattle, USA	





Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
W	496						San Francisco, USA	No. 496 purchased by Muni in 1984 (along with No. 586, kept as a spare). Museums in Motion . F (Market) line from the Transbay Terminal to Castro Street is being extended to Fisherman's Wharf. mainly operated by PCC cars, but a limited service with "historic" cars, including W2-496 is planned.	
W2	512			1925-30			Seattle, USA. 199	virtualtourist.com Currently operating on the Waterfront Streetcar Line, Seattle, USA	
W2	518.			1925-30			Seattle, USA.	Currently operating on the Waterfront Streetcar Line, Seattle, USA	
W2	525			1925-30			Seattle, USA.	Sold to Gomaco Trolley Co, Iowa for refurbishment and Currently operating on the Waterfront Streetcar Line, Seattle, USA. But may be used for parts	
W2	531						San Jose Cal. USA	Currently operating on the San Jose Trolley, downtown loop, San Jose, USA. Converted to pantograph and can run on the entire system, the only historic car which can do so.	
W	533						Iowa, USA	Gomaco Trolley Co, Iowa	
W	539						Iowa, USA	Gomaco Trolley Co, Iowa	
W	540						Iowa, USA	Gomaco Trolley Co, Iowa	
W	545						Iowa, USA	Gomaco Trolley Co, Iowa	
W	551						Iowa, USA	Gomaco Trolley Co, Iowa	
W	553						Iowa, USA	Gomaco Trolley Co, Iowa	
W	567						Iowa, USA	Gomaco Trolley Co, Iowa	
W2	586						San Francisco, USA	preserved by the San Francisco, USA, "Muni". Not yet operating but proposed for Fishermen's Wharf	
W2	601						Chisholm, USA	Currently operating at the Iron Range Center, Chisholm, USA.	
W2	605.						Seattle, USA	Currently operating on the Waterfront Streetcar Line, Seattle, USA	
W2	606						Chisholm, USA	Currently operating at the Iron Range Center, Chisholm, Minnesota USA. –'Minnesota Discovery Centre', formerly 'Iron World'	
W2	626						New Orleans / Memphis?	Currently operating on the Riverfront Heritage Tramway, New Orleans, USA. – line converted back to 5' gauge and trams sold to Memphis.	
W	630						Iowa, USA	Gomaco Trolley Co, Iowa	
W2	648						Rio Vista, California, USA.	Currently operating at the Western Railway Museum, Rio Vista, USA.	
W	751						Iowa, USA	Gomaco Trolley Co, Iowa	
W5	756						Portland Oregon ? Georgia, USA	Sold to Gomaco Trolley Co, Iowa and refurbished for restaurant tram on the Willamette Shore Trolley, Portland, USA.? Highly modified with AC motors powered by biodiesel-fueled generators. River Street in Savannah, Georgia, 2009 http://www.railpage.com.au/f-t11351536-s0.htm	
W	799						Iowa, USA	Gomaco Trolley Co, Iowa	
W	839						Iowa, USA	Gomaco Trolley Co, Iowa	

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
SW6	893			1944Preston Workshops		1997	MOTAT Auckland.	Built by the Melbourne & Metropolitan Tramways Board's Preston Workshops. Fitted with steel window frames and Motorman controlled, pneumatically operated sliding doors. Withdrawn more than 52 years service in 1997 and placed in storage at the former Preston Workshops in the back up fleet, but never utilised. Selected from hundreds of stored trams by MOTAT volunteers and kindly donated by the Victorian Department of Infrastructure. No.906 in 2006 & No.893 in 2008. Length 46'6" (14.17 m) weight 17.7 tonne. M&MTB No.15 trucks. 4-40hp GE motors, License built RC2 controllers: hand- and self lapping air-brakes.	
SW6	906			1945Preston Workshops		1997	MOTAT Auckland.	Built by the Melbourne & Metropolitan Tramways Board's Preston Workshops. Fitted with steel window frames and Motorman controlled, pneumatically operated sliding doors. Withdrawn more than 52 years service in 1997 and placed in storage at the former Preston Workshops in the back up fleet, but never utilised. Selected from hundreds of stored trams by MOTAT volunteers and kindly donated by the Victorian Department of Infrastructure. No.906 in 2006 & No.893 in 2008. Length 46'6" (14.17 m) weight 17.7 tonne. M&MTB No.15 trucks. 4-40hp GE motors, License built RC2 controllers: hand- and self lapping air-brakes.	
SW6	965						Copenhagen Tram Museum	Restored at a cost of \$25,000 and donated to Copenhagen Tram Museum as a wedding present from the Victorian Government to Princess Mary and Crown Prince Frederik of Denmark	Diplomatic value and expression of political views of significance of W class trams

6. Replica trams (4 items)

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments	Significance
MTOC horse tram	No. 253		Single truck cross-bench Horse Tramcar		Replica Royal Parade and the Melbourne Zoo	line closed in 1923	TMSV Bylands	Replica of a horse tram used on the Zoological Gardens constructed from original drawings and mounted on a standard Melbourne cable tram truck. used for a horse tram service at Bylands prior to the availability of electric traction at the museum.	
MTOC Replica	95 ?		Cable Tram Dummy and Trailer		1888?		Portland Victoria	Replica Used with internal combustion motor on Portland foreshore from June 1996, restored by Keith McMillan	
MTOC Replica	593		Single truck cable tram dummy car	1980's by trainees at Malvern Depot	Formally operated in Hudson Park, Kilmore.		Melbourne Tram Museum @ Hawthorn Depot.	This car is a replica of a cable tram dummy built from recovered components in the early 1980's. It is fitted with a small petrol driven internal combustion engine, and is used in conjunction with the cable tram trailer No 171. This tram, along with trailer, has operated in Hudson Park Kilmore, Moomba parades and has also operated for brief periods at a number of other Australian tramway museums.	High quality replica, able to demonstrate the concepts and style of the cable trams
Doncaster Tramway	1		Replica electric tram	1888 (original for Melbourne Exhibition)	1889-1896	1896 – line closed	Schramms Cottage, Doncaster	replica of the Box Hill - Doncaster Tram that ran from 1889 to 1896 along the line of Tram Road.	Poor reproduction, but provides interpretive value

7. Non Victorian Trams preserved in Victoria (6 items)

Class /	Designation	Image	Type	Built:	In Service:	Withdrawn:	Preserved:	Comments
Adelaide H Class	No.373			1929 by Pengelley & Co of Adelaide	1929 (MTT Adelaide)	2006 (Trans Adelaide)	2006 TMSV Bylands	Built for the Municipal Tramways Trust, Adelaide. These trams had many characteristics of American Interurban cars of the era, and were introduced for exclusive service on the Glenelg line. They were often operated coupled into pairs in peak periods. In latter years they were also used on the other suburban tram routes, until the closure of the main Adelaide tramway system in 1958. The full fleet of 30 were retained for operation on the Glenelg line after 1958. Over the years the fleet had been reduced to 21 cars, and in 2004 the South Australian Government approved the purchase of 11 new modern Light-rail vehicle. Five 5 H class trams have been retained for Adelaide system.
Ballarat No.	23		Scrubber Car	Duncan & Fraser	1913 (ESV)	1971 (SECV)	1971 TMSV Bylands	This is the only tram still in existence that was built new for the Ballarat tram system, all other Ballarat trams Currently in preservation, having been bought second hand for that system. built in 1913 by Duncan & Fraser as a single truck straight sill closed cross bench tramcar, one of 3 built for the ESV Ballarat system. They were convertible between summer and winter use, the centre seats being removed in winter to provide an aisle. In 1934withdrawn from passenger service and converted to a scrubber tramcar, in which capacity it remained in service until closure in 1971.
Geelong	22			Pengelley & Co of Adelaide1924- 5,	1924-5 (MESCo)	1956 (SECV)	1969 TMSV Bylands	One of 8 ordered by MESCo for service in Geelong in the form of a straight sill closed combination car with Brill Radiax trucks. These were the largest and heaviest single truck passenger trams built in Australia, and the last new cars built for service in Geelong. one of the four Pengelley trams not modified for one man use, remaining in two man configuration for its entire life. taken over along with the Geelong system by the SECV in 1930, and remained in service until the systems closure in 1956.
Geelong	9 (Butterbox)			Duncan & Fraser in 1915	1915 (MESCo)	1956 (SECV)	1982 TMSV Bylands	Part of the second order of three of the Geelong Butterbox class, which totalled 10. These cars were a single truck straight sill open combination tramcar, and formed a major part of the Geelong fleet for the entirety of the system's existence. Originally operated as a two man tramcar, after the takeover of MESCo by the SECV modified for use as a one man tramcar in 1932.originally built with 26" wheels, but was later modified to use 33" wheels.
J	65			1915		1928 MMTB	Ballarat	preserved by the Ballarat Tram Museum as Ballarat 11.
J	68			Meadowbank Manufacturing Co 1915	P&MTT 1915	Ballarat 1936-?	Ballarat	Tram No.13 (originally built as J Class no: 68 in 1915 by the Meadowbank Manufacturing Co. for the Prahran and Malvern Tramways Trust as number 68. Classified "J" class when taken over by the Melbourne and Metropolitan Tramways Board. Purchased by the Melbourne Electric Supply Co. Ltd. in 1928 and became Geelong number 30. Transferred to Ballarat in 1936, becoming car number 13

8. W Class Trams Stored at Newport Workshops, Preston and elsewhere (175 items)

The following lists of stored and scrapped W class trams are drawn from the “W Class Trams” Web Page http://webspace.webring.com/people/hz/z_class/wclass8.html

- W2 class trams.**
323. - 1 tram.
- W5 class trams.**
684, 685, 720, 763, 772, 783, 823, 826, 833. - 9 trams.
- SW5 class trams.**
681, 682, 721, 722, 723, 724, 725, 726, 727, 729, 730, 731, 732, 733, 734, 736, 737, 738, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 752, 753, 754, 755, 757, 758, 760, 764, 765, 767, 768, 769, 770, 773, 775, 776, 777, 780, 781, 784, 786, 787, 788, 789, 790, 7921, 793, 797, 802, 805, 806, 807, 809, 811, 812, 814, 815, 816, 818, 819, 824, 828, 829, 830, 834, 836, 837, 838, 841, 844, 847. - 80 trams.
- SW6 class trams.**
853, 857, 858, 859, 860, 863, 867, 868, 871, 872, 873, 875, 876, 877, 878, 879, 882, 886, 889, 894, 898, 903, 904, 910, 911, 912, 913, 914, 915, 917, 920, 922, 923, 926, 927, 934, 940, 942, 943, 945, 948, 950, 952, 955, 958, 959, 962, 966, 967. - 49 trams.
- W6 class trams.**
970, 972, 973, 974, 978, 979, 985, 986, 987, 988, 989, 990, 991, 993, 994, 995, 997, 999.- 18 trams.
- W7 class trams.**
1002, 1003, 1004, 1006, 1007, 1009, 1014, 1016, 1024, 1025, 1026, 1028, 1029, 1030, 1033, 1035, 1037, 1038. - 18 trams.

In 1990, the National Trust classified all remaining W class trams. A combination of the Trust, unions and the State Government put an end to W class trams being removed from Victoria. This means that the trams listed are understood to be stored at Newport Workshops although they are not in any condition suitable for use, and in many cases are incomplete or have been cannibalised for parts..

Another set of trams is listed as being part of the Ready Reserve fleet stored at Preston Workshops. These 50 trams were supposed to be kept for emergency services such as extras for sporting events etc. but 43 of them have been stored in the old Plate Shop at the back of Preston Workshops, all except five were not on rails. SW6 936 is stored in the workshops yard as it would not fit in the Plate Shop. Another seven have been stored at various suburban depots.

Manufacturers.
JM - James Moore & Son, Sth Melbourne.
HS - MMTB Holden St Nth Fitzroy.
PW - Preston Tramway Workshops.

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
8.1 W Class 219 to W 418			
W 219. (HS)	21/12/1923 and converted to W2 class in November 1930.	Camberwell Depot	disposed of on 12/6/1981, and was dismantled in 1981 at Simsmetal, Campbellfield.
W 220. (HS)	24/12/23 and converted to W2 class in May 1931.	Malvern Depot	sold complete on 23/2/1982 to the TMSV at Bylands which intends to restore it.
W 221. (HS)	15/3/1924 and converted to W2 class in February 1932.	Glenhuntly Depot	After use as a rerailing instruction car for which fitted with a No 1 and a No 13 truck, sold on 3/02/1984 to a private buyer in Ocean Grove along with W2 627.
W 222. (HS)	18/3/1924 and converted to W2 class in March 1931.	Preston Depot	Its body sold on 17/06/1981 to Melbourne Tramcar Preservation Association, Haddon Vic. who broke it up for spare parts.
W 223. (HS)	8/4/1924 and converted to W2 class in July, 1931.	Glenhuntly Depot	sold on 3/7/1986 to Simsmetal, Brooklyn.
W 224. (HS)	8/4/1924 and converted to W2 class in October, 1930.	Kew Depot	sold on 16/4/1982 to St Albans BMX Club, and some electrical parts were sent to America.
W 225. (HS)	1/5/1924 and converted to W2 class in August, 1929.	Malvern Depot	dismantled in July, 1978.
W 226. (HS)	15/5/1924 and converted to W2 class in November 1931.	Preston Depot	sold on 2/10/1984 to a private buyer in Chirnside Park, Vic.
W 227. (HS)	16/9/1924 and converted to W2 class in September 1929.	Essendon Depot	sold on 1/7/1981 to Maher Transport at Thomastown Vic who resold it to a private buyer in Ballarat after it had spent some time in Lilydale.
W 228. (HS)	13/9/1924 and converted to W2 class in December 1929.	Essendon Depot	burnt in May 1967 and its trucks and electrical equipment ended up in New Zealand.
W 229. (HS)	14/7/1924 and converted to W2 class in January 1930.	Malvern Depot	sent to Wattle Park in June 1979 as shelter, where it still exists.
W 230. (HS)	9/8/1924 and converted to W2 class in January 1930.	Kew Depot	sold on 23/3/1983 to the Croydon Community School and was transferred to a private buyer in Laverton in July, 1989.
W 231. (HS)	13/9/1924 and converted to W2 class in September 1931.	Kew Depot	sold on 21/2/1963 to the Surrey Hills Boy's Home and was broken up for spare parts by the Tramway Museum Society of Victoria in 1975.
W 232. (HS)	13/9/1924 and converted to W2 class in January 1932.	Glenhuntly Depot	burnt at Preston Workshops in 1967.
W 233. (HS)	13/9/24 and converted to W2 class in March 1929.	Preston Depot	sold to a buyer in Brooklyn, Vic. on 24/09/1986After service as a line marker car.
W 234. (HS)	3/10/1924 and converted to W2 class in August 1931.	Glenhuntly Depot	sold to the Gomaco Trolley Co. of Ida Grove, Iowa USA on 2/12/1987 and went to Memphis Tennessee in February 1990.
W 235. (HS)	18/10/1924 and converted to W2 class in September 1931.	Brunswick Depot	sold to the Burwood Boy's Home on 28/11/1963 and was subsequently broken up.
W 236. (HS)	30/10/1924 and converted to W2 class in June 1932.	Essendon Depot	sold to a private buyer in Yambuk, Vic. on 8/06/1963 and was subsequently broken up.

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
W 237. (HS)	12/09/1925 and converted to W2 class in February 1932.	Malvern Depot	sold to a private buyer in Seaholme Vic. on 22/10/1964 along with W2 519.
W 238. (HS)	17/07/1925 and converted to W2 class in August 1931.	Kew Depot	sold to a private buyer in Hay NSW on 8/02/1964 and was subsequently repurchased by a buyer in Alexandra Vic.
W 239. (HS)	15/12/1924 and converted to W2 class in September 1932.	Preston Depot	burnt at Preston Workshops on 31/05/1967.
W 240. (HS)	7/01/1925 and converted to W2 class in August 1929.	Essendon Depot	burnt at Preston Workshops on 21/06/1967.
W 241. (HS)	13/01/1925 and converted to W2 class in February 1932.	Malvern Depot	sold to the Mill Park Primary School on 18/06/1982.
W 242. (HS)	5/02/1925 and converted to W2 class in January 1932.	Brunswick Depot	sold on 6/05/1981 to Bruckner Transport of Tullamarine Vic. who resold it to Mt. Scopus College Burwood. subsequently broken up.
W 243. (HS)	12/09/1925 and converted to W2 class in December 1931.	South Melbourne Depot	painted as a Transporting Art car , sold on 30/11/1987 to a buyer in Brooklyn Vic. who sold the body to a private buyer in Mt. Martha Vic. in November 1989 and the electrics to America in 1989.
W 244. (HS)	25/02/1925 and converted to W2 class in September 1929.	Camberwell Depot	sold in full running order on 28/03/1983 to the Newcastle Tramway Museum in Maitland NSW. When the museum was wound up 244 was overhauled and repainted in Christchurch (NZ) livery and is now running in Christchurch.
W 245. (HS)	17/07/1925 and converted to W2 class in April 1931.	South Melbourne Depot	245 was also sold in full running order to the Newcastle Tramway Museum on 28/03/1983. When the museum was wound up converted to a restaurant at Honeysuckle (A suburb of Newcastle).
W 246. (HS)	18/07/1925 and converted to W2 class in December 1931.	Essendon Depot	painting as a Transporting Art car sold to Maher Transport of Thomastown Vic. who resold it to a private buyer in Mentone, Vic.
W 247. (HS)	26/03/1925 and converted to W2 class in December 1929.	Preston Depot	also sold to the Newcastle Tramway Museum, this time on 4/6/1982. However, it expired prematurely when a crane went through its roof on offloading at Maitland, and subsequently broken up.
W 248. (HS)	11/4/1925 and converted to W2 class in July 1929.	Glenhuntly Depot	sold to Maher Transport, Thomastown Vic. on 13/11/1981 and was resold to a private buyer in West Somerville Vic. It found its way to the Tramway Museum Society of Victoria, Bylands Vic. on an unknown date and was dismantled for parts in 2000 due to damage being caused by its being used as a storage for potted plants (!) at Bylands.
W 249. (JM)	10/09/1924 and converted to W2 class in October 1931.	Preston Depot	sold to a private buyer in Ballarat on 10/12/86 and has since been moved to Canberra ACT for use on the "Federation Line" with Sydney R1 2001.
W 250. (JM)	18/6/1924 and converted to W2 class in June 1932.	Essendon Depot	sold to Maher Transport, Thomastown Vic. on 19/07/1982 and resold to a private buyer in the Yarrawonga, Vic. area.
W 251. (JM)	4/7/1924 and converted to W2 class in February 1932.	Preston Depot	sold complete to Our Lady of Carmel Monastery in Beaconsfield Pde Albert Park on 16/02/1987, and was resold to an unknown buyer sometime in the late 1990's.
W 252. (JM)	20/09/1924 and converted to W2 class in April 1932.	Hawthorn Depot	sold to a private buyer in Robinvale Vic. on 6/09/1966.
W 253. (JM)	6/08/1924 and converted to W2 class in December 1931.	Preston Depot	sold to a private buyer in Frankston Vic on 25/03/1986.
W 254. (JM)	2/09/1924 and converted to W2 class in March 1931.	Brunswick Depot	sold to a private buyer in East Keilor Vic. on 27/07/1979 and then went to the former cable tram depot in Bridge Rd Richmond. burnt out in January 1986.
W 255. (JM)	20/09/1924 and converted to W2 class in March 1932.	Kew Depot	sold to the Windmill Caravan Park in Ballarat Vic. on 24/10/1985 and I personally sighted it at the caravan park in early 1999 with one saloon and the drop centre missing. Since then, the surviving saloon has departed the park for places unknown.
W 256. (JM)	18/09/1924 and converted to W2 class in November 1928.	Malvern Depot	sold on 25/07/1966 to the Northcote Kindergarten and was broken up by September 1982 at the Northcote tip.
W 257. (JM)	6/10/1024 and converted to W2 class in July 1932.	Malvern Depot	sold to a buyer in Brooklyn Vic. on 8/09/86 and was resold to a private buyer in Ballarat.
W 258. (JM)	18/10/1924 and converted to W2 class in April 1932.	Essendon Depot	sold to Maher Transport, Thomastown Vic. on 10/12/1981 and resold to a private buyer in Bailston Vic.
W 259. (JM)	18/10/1924 and converted to W2 class in September 1931.	Glenhuntly Depot	burnt on 21/03/1975 after part of its roof had been used for strength testing in 1974.
W 260. (JM)	24/10/1924 and converted to W2 class in May 1932.	Glenhuntly Depot	sold to a private buyer in North Carlton Vic. on 17/11/1981 and subsequently transferred to Noojee Vic.
W 261. (JM)	14/08/1925 and converted to W2 class in November 1929.	Glenhuntly Depot	sold to Simsmetal, Campbellfield on 10/06/1980 and broken up.
W 262. (JM)	11/09/1925 and converted to W2 class in October 1931.	Preston Depot	sold to a private buyer in Werribee Vic. on 25/03/1986. The tram is Currently (November 2001) advertised for sale at the corner of Homestead and Aviation Rds Point Cook, near the airport entrance.
W 263. (JM)	1/11/1925 and converted to W2 class in July 1930.	Essendon Depot	sold on 24/11/1981 to Maher Transport, Thomastown Vic. who resold it to a private buyer in Cockatoo, Vic.
W 264. (JM)	3/11/1925 and converted to W2 class in January 1933.	Glenhuntly Depot	sold on 16/01/1963 to a private buyer in Flowerdale Vic. who built it into a house.
W 265. (JM)	15.12.1924 and converted to W2 class in May 1932.	Brunswick Depot	sold on 22/10/1964 to the Mentally Retarded Children's Centre in Traralgon Vic. and was subsequently broken up.
W 266. (JM)	17/01/1925 and converted to W2 class in July 1932.	Preston Depot	sold to Salesian Brothers College, Chadstone Vic. on 17/03/1963.
W 267. (JM)	7/01/1925 and converted to W2 class in November 1931.	Malvern Depot	sold to Tally Ho Boy's Village, Launching Place, Vic. on 24/09/1970.
W 268. (JM)	28/01/1925 and converted to W2 class in February 1933.	Essendon depot	sold on 15/06/1981 to Mahers Transport, Thomastown Vic., and was resold to a private buyer in Lower Templestowe, Vic. and it finally ended up in Diamond Creek, Vic
W 269. (JM)	2/02/1925 and converted to W2 class in December 1932.	Glenhuntly Depot	sold on 9/9/1981 to Maher Transport, Thomastown Vic. who resold it to a private buyer in Williamstown Vic.
W 270. (JM)	10/2/1925 and converted to W2 class in October 1931.	Glenhuntly Depot	sold on 30/04/1984 to a private buyer in Shepparton Vic.
W 271. (JM)	20/02/1925 and converted to W2 class in September 1931.	Preston Depot	sold on 3/09/1962 to "Sparrows In The Treetops", North Warrandyte Vic.
W 272. (JM)	20/06/1925 and converted to W2 class in September 1931.	Brunswick Depot	sold in full working order to Paul Class of Gales Creek Enterprises in the USA, which overhauled it and sold it to the Waterfront Streetcar line in Seattle where the tram is now running in regular service.
W 273. (JM)	27/12/1925 and converted to W2 class in January 1929.	Kew Depot	sold to Bruckner Transport, Tullamarine Vic. who broke it up.
W 274. (JM)	27/12/1925 and converted to W2 class in June 1931.	Malvern Depot	sold on 19/11/1962 to a private buyer in Kangaroo Ground Vic. and was burnt in February 1963.
W 275. (JM)	26/08/1925 and converted to W2 class in January 1929, and then converted to SW2 class sometime in the 1950's.	Malvern Depot	sold less trucks on 30/9/1988 to The Bendigo Trust who overhauled it and painted it brown and cream. The trucks now on the tram came from an unknown W2 class tram from Heathcote Vic. 275Currently operates in Bendigo as a "Talking Tram" on the tour between Central Deborah gold mine and North Bendigo.
W 276. (JM)	22/04/1925 and converted to W2 class in June 1929.	Brunswick Depot	sold on 22/05/1963 to a buyer in West Geelong and was sent to Ocean Grove Vic. where broken up.
W 277. (JM)	14/01/1926 and converted to W2 class in April 1932.	South Melbourne Depot	sold on 1/11/1985 to a private buyer in Montrose Vic.
W 278. (JM)	16/05/1925 and converted to W2 class in July 1931.	Brunswick Depot	sold on 2/10/1981 to a private buyer in Castlemaine Vic. and was sent to Muckleford Vic.
W 279. (HS)	25/04/1924 and converted to W2 class in February 1931.	Camberwell Depot	sold on 2/04/1965 to Mitcham Special School and was subsequently broken up.
W 280. (HS)	10/05/1924 and converted to W2 class in May 1930.	Brunswick Depot	sold on 1/06/1982 to Westmeadows Primary School, then repurchased by a private buyer in Laverton Vic. and finally sent to Perth WA.
W 281. (HS)	3/05/1924 and converted to W2 class in August 1931.	Kew Depot	sold on 7/08/1980 to the Geelong Steam Preservation Society who resold it to a private buyer in Thevenard SA.
W 282. (HS)	10/05/1924 and converted to W2 class in February 1931.	Kew Depot	sold on 26/06/1986 to a buyer in Brooklyn Vic.
W 283. (HS)	15/05/1924 and converted to W2 class in November 1932.	Essendon Depot	sold on 30/04/1980 to "Wobbie's World" (a children's playground) in Springvale Rd Nunawading Vic. complete with motorised trucks.
W 284. (HS)	23/05/1924 and converted to W2 class in August 1928.	Essendon depot	sold on 13/05/1981 to a private buyer in Lang Lang Vic. who installed it at the Bass Highway Roundabout, The Gurdies Vic.
W 285. (HS)	23/05/1924 and converted to W2 class in January 1931.	Hawthorn Depot	sold on 24/01/1963 to a private buyer in Box Hill Vic. who resold it to a buyer in Laverton Vic.
W 286. (HS)	31/05/1924 and converted to W2 class in September 1932.	South Melbourne Depot	burnt on 11/07/1967.

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
W 287. (HS)	8/06/1924 and converted to W2 class in June 1932.	Camberwell Depot	sold on 2/06/1964 to a private buyer in Hay NSW.
W 288. (HS)	11/06/1924 and converted to W2 class in April 1931.	Kew Depot	sold on 2/05/1983 to Maher Transport, Thomastown Vic. after its cabs were used on W2 221.last sighted in Laverton Vic In October 1989.
W 289. (HS)	19/06/1924 and converted to W2 class in September 1931.	Hawthorn Depot	sold on 28/09/1966 to a private buyer in Robinvale Vic.
W 290. (HS)	23/06/1924 and converted to W2 class in November 1931.	Brunswick Depot	sold on 25/10/1966 to a private buyer in Robinvale Vic.
W 291. (HS)	26/06/1924 and converted to W2 class in May 1932.	Camberwell Depot	sold on 3/02/1964 to the Convent Of The Good Shepherd, Chadstone Vic. and was subsequently broken up.
W 292. (HS)	26/06/1924 and converted to W2 class in May 1932.	Malvern Depot	sold on 7/08/1979 to a private buyer in Mansfield Vic and was last heard of in Boolarra Vic.
W 293. (HS)	4/07/1924 and converted to W2 class in November 1928.	Malvern Depot	sold on 28/08/1980 to a private buyer in Yarrambat Vic.
W 294. (HS)	7/07/1924 and converted to W2 class in October 1932.	Brunswick Depot	sold in full working order on 1/04/1977 to the Australian Electric Transport Museum in Adelaide SA where it forms part of their fleet of working trams. It has been refurbished to 1930's condition.
W 295. (HS)	8/07/1924 and converted to W2 class in November 1931.	Preston Depot	burnt on 8/06/1967.
W 296. (HS)	17/07/1924 and converted to W2 class in May 1932.	Kew Depot	sold on 22/11/1966 to a private buyer in Kilmore Vic.
W 297. (HS)	17/07/1924 and converted to W2 class in May 1931.	South Melbourne Depot	burnt on 25/07/1967.
W 298. (HS)	23/07/1924 and converted to W2 class in January 1931.	Malvern Depot	sold on 3/08/1979 to a private buyer in Violet Town Vic.
W 299. (HS)	22/07/1924 and converted to W2 class in April 1932.	Malvern Depot	sold on 13/09/1966 to a private buyer in Robinvale Vic.
W 300. (HS)	5/08/1924 and converted to W2 class in August 1932.	Malvern Depot	sold on 9/11/1967 to a private buyer in Robinvale Vic.
W 301. (HS)	13/8/1924 and converted to W2 class in January 1930.	Malvern Depot	sold on 16/4/1982 to the St Albans BMX Club after some parts had been removed for shipment to America.
W 302. (HS)	7/8/1924 and converted to W2 class in August 1931.	Malvern Depot	sold on 13/11/1979 to Wobbies World, a children's playground in Springvale Rd Nunawading.
W 303. (HS)	5/8/1924 and converted to W2 class in May 1931.	Malvern Depot	sold on 10/8/1981 to Glenroy High School and was subsequently burnt out.
W 304. (HS)	14/8/1924 and converted to W2 class in December 1932.	Malvern Depot	burnt on 29/7/1968 after it had had a disagreement with W2 559 on 20/3/1968.
W 305. (HS)	15/8/1924 and converted to W2 class in April 1932.	Sth Melbourne Depot	sold on 31/10/1966 to St Stephens Presbyterian Church, Bennettswood Vic. and subsequently broken up.
W 306. (HS)	26/8/1924 and converted to W2 class in July 1929.	Malvern Depot	sold on 16/11/1967 to Allambie Reception Centre Burwood Vic.
W 307. (HS)	2/9/1924 and converted to W2 class in February 1932.	Hawthorn Depot	burnt on 8/8/1967.
W 308. (HS)	20/9/1924 and converted to W2 class in January 1929.	Kew Depot	burnt on 29/9/1967.
W 309. (HS)	20/7/1925 and converted to W2 class in January 1929.	Hawthorn Depot	sold on 16/8/1966 to a private buyer in Robinvale Vic.
W 310. (HS)	23/3/1925 and converted to W2 class in June 1932.	Hawthorn Depot	sold on 2/12/1964 to the Kew Mental Homes and subsequently broken up.
W 311. (HS)	20/7/1925 and converted to W2 class in January 1932.	Glenhuntly Depot	sold on 17/10/1983 to Box Hill Sth Preschool Centre.
W 312. (HS)	20/7/1925 and converted to W2 class in September 1929.	Sth Melbourne Depot	sold on 4/2/1982 to Maher Transport Thomastown Vic. who resold it to a private buyer in Mildura Vic.
W 313. (HS)	3/11/1925 and converted to W2 class in April 1923.	Malvern Depot	burnt on 19/08/1959 after the tram caught fire on 11/06/1958.the first W2 class tram to be scrapped.
W 314. (HS)	20/10/1925 and converted to W2 class in January 1930.	Brunswick Depot	sold on 24/11/1981 to Maher Transport, Thomastown Vic. who resold it to a private buyer in Geelong.
W 315. (HS)	28/09/1925 and converted to W2 class in October 1931.	Brunswick Depot	sold to a buyer in Pambula NSW who used it as a shop.
W 316. (HS)	1/11/1925 and converted to W2 class in July 1932.	Kew Depot	burnt on 22/04/1963.
W 317. (HS)	20/07/1925 and converted to W2 class in August 1932.	Hawthorn Depot	sold on 6/02/1964 to a private buyer in Keilor Vic who broke it up.
W 318. (HS)	9/09/1925 and converted to W2 class in August 1932.	Essendon Depot	in use as a shelter in Wattle Park from 8/04/1963 until broken up in June 1979.
W 319. (HS)	12/03/1925 and converted to W2 class in January 1933.	Hawthorn Depot	sold on 4/02/1970 to the Box Hill City Council who subsequently broke it up.
W 320. (HS)	23/03/1925 and converted to W2 class in April 1930.	Kew Depot	burnt on 20/09/1968.
W 321. (HS)	12/07/1925 and converted to W2 class in September 1929.	Malvern Depot	sold in full working order to the Museum Of Transport And Technology (MOTAT), Auckland New Zealand on 18/03/1982 and is Currently operating at the museum.
W 322. (HS)	10/07/1925 and converted to W2 class in September 1929.	Brunswick Depot	sold on 4/11/1982 to Maher Transport Thomastown Vic. who resold it to a private buyer in Seymour Vic.
W 323. (HS)	10/09/1925 and converted to W2 class in April 1929.	Essendon Depot	sold on 12/02/1986 to a private buyer in Trentham Vic.
W 324. (HS)	11/07/1925 and converted to W2 class in November 1929.	Glenhuntly Depot	sold on 11/05/1978 to Greenbank Primary School, Epping Vic. and ended up with a private owner in Diamond Creek Vic.
W 325. (HS)	28/02/1925 and converted to W2 class in October 1931.	Camberwell Depot	destroyed in a fire on 16/12/1959, and the framework was placed in the Conductor's school at Hawthorn Depot
W 326. (HS)	20/06/1925 and converted to W2 class in July 1932.	Malvern depot	sold on 2/08/1966 to a private buyer in Robinvale Vic.
W 327. (HS)	6/03/1925 and converted to W2 class in November 1932.	Glenhuntly Depot	sold on 7/08/1981 to Maher Transport Thomastown Vic. who resold it to a car yard in Ballarat Rd, Maidstone Vic.
W 328. (HS)	20/06/1925 and converted to W2 class in April 1932.	South Melbourne Depot	sold on 5/07/1982 to Maher Transport Thomastown Vic. who resold it to a private buyer in Dandenong Vic.
W 329. (HS)	14/11/1925 and converted to W2 class in June 1929.	Essendon Depot	sold in full working order to the Perth Electric Transport Museum, Whiteman Park WA and is Currently operating at the museum. repainted in its original brown and cream colour scheme in 1986.
W 330. (HS)	14/04/1926 and converted to W2 class in July 1929.	Camberwell Depot	body was sold on 24/10/1967 to a private buyer in Robinvale Vic. who broke it up sometime in 1986.
W 331. (HS)	28/07/1926 and converted to W2 class in August 1929.	Camberwell Depot	sold on 16/12/1980 to the Tramway Museum Society of Victoria, Bylands Vic. who resold it to New Orleans USA in May 1988. The tram has since moved on to Memphis Tennessee after New Orleans built some replica Perley Thomas cars. While in New Orleans service, the car was renumbered 455, which the tram will retain in Memphis.
W 332. (HS)	14/05/1926 and converted to W2 class in August 1929.	Camberwell Depot	sold on 20/09/1982 to Maher Transport Thomastown Vic who resold it to a private buyer in Maryknoll Vic.
W 333. (HS)	15/12/1926 and converted to W2 class in August 1929.	Preston Depot	sold on 26/06/1981 to Maher Transport Thomastown Vic. who resold it to a private buyer in Avoca Vic.
W 334. (HS)	7/10/1926 and converted to W2 class in September 1929.	Preston Depot	sold on 15/2/1984 to a private buyer in Preston Vic.
W 335. (HS)	26/10/1926 and converted to W2 class in November 1929.	Malvern Depot	sold on 3/4/1986 to a private buyer in Werribee Vic.
W 336. (HS)	9/10/1925 and converted to W2 class in November 1929.	Preston Depot	sold to a buyer in Brooklyn Vic. on 25/11/1987 and the electrical and mechanical parts were sold to the Gomaco Trolley Co., Ida Grove USA on a date unknown.
W 337. (HS)	18/01/1926 and converted to W2 class in January 1930.	Preston Depot	sold on 14/05/1980 to a private buyer in Yarrambat Vic.
W 338. (HS)	18/10/1926 and converted to W2 class in March 1930.	Essendon Depot	sold on 15/06/1981 to Maher Transport Thomastown Vic who resold it to a private buyer in Geelong Vic.
W 339. (HS)	8/09/1925 and converted to W2 class in August 1931.	Hawthorn Depot	used as a shelter at Wattle Park from 8/04/1963 until broken up in June 1979.
W 340. (HS)	16/10/1925 and converted to W2 class in August 1929.	Malvern Depot	painted as a Transporting Art car was sold on 3/12/1987 to a buyer in Brooklyn Vic. who resold it to Hungry Jack's, Melton Vic. in August 1989. Several parts from the tram were sent to America, probably the Gomaco Trolley Co.
W 341. (HS)	3/11/1925 and converted to W2 class in November 1929.	Malvern Depot	sold on 8/05/1968 to a private buyer in Kinglake Vic.
W 342. (HS)	3/12/1925 and converted to W2 class in March 1931.	Essendon Depot	sold on 17/11/1981 to a private buyer in Noojee Vic. who used it as a holiday house.

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
W 343. (HS)	13/01/1926 and converted to W2 class in September 1932.	Essendon Depot	burnt on 8/09/1967.
W 344. (HS)	13/01/1926 and converted to W2 class in November 1929.	Glenhuntly Depot	sold on 8/07/1981 to Maher Transport Thomastown Vic. who resold it to a private buyer in Wentworth NSW.
W 345. (HS)	13/01/1926 and converted to W2 class in May 1929.	Glenhuntly Depot	sold on 30/11/1987 to a buyer in Brooklyn Vic who resold some parts to an organisation in the USA in 1989 and the body to the same place in March 1991.
W 346. (HS)	4/12/1925 and converted to W2 class in February 1930.	Glenhuntly Depot	sold on 16/04/1981 to a private buyer in Tatura Vic.
W 347. (HS)	11/01/1926 and converted to W2 class in May 1931.	Glenhuntly Depot	sold on 6/03/1981 to a private buyer in Burwood Vic.
W 348. (HS)	21/12/1925 and converted to W2 class in November 1930.	Glenhuntly Depot	burnt on 24/08/1966.
W 349. (HS)	18/12/1925 and converted to W2 class in August 1932.	Brunswick Depot	sold on 14/11/1985 to Croydon Village School, Nth Croydon Vic.
W 350. (HS)	28/12/1925 and converted to W2 class in September 1932.	Kew Depot	sold on 15/05/1986 to a private buyer in Werribee Vic. who resold it to owners in Darwin, NT who converted it to a cafe in Mitchell St Darwin.
W 351. (HS)	14/01/1926 and converted to W2 class in October 1932.	Camberwell Depot	burnt on 11/10/1967.
W 352. (HS)	31/01/1926 and converted to W2 class in June 1931.	Kew Depot	sold on 4/02/1982 to Maher Transport Thomastown Vic. while its mechanical parts went to America. The body was still at Maher's in September 1988.
W 353. (HS)	9/02/1926 and converted to W2 class in June 1932.	Kew Depot	sold on 21/03/1986 to the Gomaco Trolley Co. of Ida Grove, Iowa USA and became Gomaco W2 demonstrator 1978. The tram has since been sold to NATA Memphis Tennessee and will retain the Gomaco number.
W 354. (HS)	22/03/1926 and converted to W2 class in February 1931.	Malvern Depot	sold on 15/02/1978 to the Australian Electric Traction Museum in Adelaide SA who have converted it to a works car.
W 355. (HS)	14/01/1926 and converted to W2 class in February 1931.	Malvern Depot	sold on 6/07/1979 to a private buyer in Monbulk Vic.
W 356. (HS)	5/05/1926 and converted to W2 class in July 1930.	South Melbourne Depot	converted to track scrubber/flusher 7W in September 1964 and sold in running order to the Tramway Museum Society of Victoria on 11/09/1986.
W 357. (HS)	30/01/1926 and converted to W2 class in June 1931.	Malvern Depot	sold in full running order on 18/04/1977 to the Melbourne Tramcar Preservation Society, Haddon Vic.
W 358. (HS)	17/02/1926 and converted to W2 class in March 1931.	Malvern Depot	sold on 10/02/1981 to Bucchans State School, Bucchans Vic.
W 359. (HS)	26/02/1926 and converted to W2 class in June 1932.	Malvern Depot	sold on 11/05/1979 to a private buyer in Cobram Vic.
W 360. (HS)	16/03/1926 and converted to W2 class in November 1930.	Malvern Depot	sold on 15/07/1981 to Maher Transport Thomastown Vic who resold it to a buyer in South Yarra Vic. It ended up in Macclesfield Vic. in 1987.
W 361. (HS)	5/06/1926 and converted to W2 class in November 1932.	Kew Depot	Its ends and frames were combined with equipment from track cleaner (2nd) No. 6 in 1963 to form (3rd) No. 6 bogie dust suction car and was sold in full working order on 2/10/1986 to the Perth Electric Transport Society, Whiteman Park WA for use on their museum tramway.
W 362. (HS)	29/03/1926 and converted to W2 class in March 1930.	Malvern Depot	sold on 30/09/1981 to Maher Transport Thomastown Vic. who resold it to a private buyer in Woolert Vic.
W 363. (HS)	14/05/1926 and converted to W2 class in March 1930.	Malvern Depot	sold on 30/07/1979 to a private buyer in Mansfield Vic.
W 364. (HS)	3/06/1926 and converted to W2 class in June 1931.	Malvern Depot	sold on 11/12/1980 to a private buyer in Alexandra Vic.
W 365. (HS)	3/06/1926 and converted to W2 class in March 1931.	Kew Depot	burnt on 5/10/1967.
W 366. (HS)	11/06/1926 and converted to W2 class in May 1931.	Essendon Depot	sold on 28/11/1985 to the "Three R's Committee", Melba Centre, Mt Evelyn Vic.
W 367. (HS)	25/06/1926 and converted to W2 class in July 1932.	Kew Depot	sold on 3/07/1986 to a buyer in Brooklyn Vic.
W 368. (HS)	9/09/1926 and converted to W2 class in August 1930.	Kew Depot	sold in full working order on 13/03/1984 to the Perth Electric Transport Society. It arrived in Fremantle on the MV Irene Greenwood on 28/03/1984 and was transferred to Whiteman Park to operate the museum tramway.
W 369. (JM)	3/11/1925 and converted to W2 class in January 1930.	Kew Depot	sold in full working order on 19/8/1986 to Dallas Texas. The body was extensively reworked and its first run in Dallas was on 22/6/1989.
W 370. (JM)	26/12/1925 and converted to W2 class in June 1929.	Kew Depot	sold in full working order to a private buyer in Wollongong NSW who intended to use it on a tourist line in Port Kembla. This never happened, and the tram sat disused for several years slowly deteriorating in the Port Kembla pollution until rescued by the Sydney Tramway Museum and transferred to Loftus NSW.
W 371. (JM)	17/12/1925 and converted to W2 class in August 1931.	Kew Depot	sold on 3/7/1986 to a buyer in Brooklyn Vic.
W 372. (JM)	11/8/1925 and converted to W2 class in October 1932.	Camberwell Depot	sold on 16/11/1967 to the Lightning Ridge Tram-O-Tell, NSW.
W 373. (JM)	10/8/1925 and converted to W2 class in August 1932.	Glenhuntly Depot	sold on 15/11/1979 to a private buyer in Mansfield Vic.
W 374. (JM)	13/08/1925 and converted to W2 class in July 1931.	Malvern Depot	sold on 25/10/1984 to a private buyer in Donvale Vic.
W 375. (JM)	29/12/1925 and converted to W2 class in September 1931.	Malvern Depot	sold on 24/7/1979 to a private buyer in Mansfield Vic who resold it to a buyer in Nth Ringwood in 1984.
W 376. (JM)	3/11/1925 and converted to W2 class in March 1929.	South Melbourne Depot	sold on 7/12/1981 to a private buyer in Neerim Sth Vic.
W 377. (JM)	5/12/1925 and converted to W2 class in October 1928.	Malvern Depot	sold on 10/8/1981 to Glenroy High School.
W 378. (JM)	3/11/1925 and converted to W2 class in September 1932.	Malvern Depot	sold on 3/8/1982 to the Life Christian Academy, Warranwood Vic.
W 379. (JM)	3/11/1925 and converted to W2 class in August 1931.	Malvern Depot	sold on 28/6/1967 to the Methodist Ladies College, Kew Vic.
W 380. (JM)	25/12/1925 and converted to W2 class in February 1929	regular service was Kew Depot	never officially withdrawn from service. transferred from Kew Depot to storage at Hawthorn Depot, then it went to Preston Workshops for restoration back to W class on 24/9/1987.transferred to the Heritage Fleet as a W class tram in August 1988.
W 381. (JM)	25/12/1925 and converted to W2 class in November 1931.	Malvern Depot	sold on 20/8/1986 to a buyer in Brooklyn Vic.
W 382. (JM)	25/12/1925 and converted to W2 class in November 1931.	Malvern Depot	sold on 27/11/1985 to a private buyer in Heathcote Vic.
W 383. (JM)	26/12/1925 and converted to W2 class in October 1932.	Malvern Depot	used as a shelter shed at Wattle Park from 15/6/1979 until January 1994 when broken up.
W 384. (JM)	3/11/1925 and converted to W2 class in December 1931.	Sth Melbourne depot	painted as a Transporting Art car in 1980 by Howard Arkley. sold to Paul Class of Gales Creek Enterprises in the USA. Its electrics went to America in 1989 and the body followed in 1991.
W 385. (JM)	21/12/1925 and converted to W2 class in October 1932.	Sth Melbourne Depot	sold on 20/6/1979 to a private buyer in Monbulk Vic.
W 386. (JM)	21/12/1925 and converted to W2 class in August 1931.	Malvern Depot	sold on 24/10/1978 to the Sunbury Mental Health Auxiliary and later burnt.
W 387. (JM)	1/1/1926 and converted to W2 class in March 1929.	Malvern Depot	sold on 30/5/1978 to a private buyer in Hay NSW.
W 388. (HS)	31/12/1925 and converted to W2 class in September 1931.	Brunswick depot	sold on 26/6/1986 to the proprietors of Ogden's Bar and Grill in Sth Perth WA.
W 389. (HS)	28/12/1925 and converted to W2 class in March 1932.	Malvern Depot	sold on 6/2/1986 to a private buyer in Alphington Vic.
W 390. (HS)	25/12/1925 and converted to W2 class in October 1932.	Kew Depot	sold on 12/7/1979 to a private buyer in Mansfield Vic.
W 391. (HS)	28/12/1925 and converted to W2 class in April 1931.	Glenhuntly Depot	sold on 17/2/1986 to a private buyer in Koondrook Vic.
W 392. (HS)	26/12/1925 and converted to W2 class in April 1931.	Essendon Depot	sold in full working order to the Sydney Tramway Museum on 23/3/1984.
W 393. (JM)	23/1/1926 and converted to W2 class in June 1931.	Kew Depot	sold in full working order to the Perth Electric Transport Society, Whiteman Park WA on 16/12/1985.
W 394. (JM)	18/1/1926 and converted to W2 class in July 1931.	Camberwell Depot	sold on 30/5/1980 to a private buyer in Launching Place Vic. burnt out in a bushfire.
W 395. (JM)	23/1/1926 and converted to W2 class in June 1929.	Malvern Depot	sold complete on 30/10/1980 to a private buyer in Beaconsfield Vic.
W 396. (JM)	23/1/1926 and converted to W2 class in June 1929.	Essendon Depot	sold on 20/9/1982 to Maher Transport Thomastown Vic.
W 397. (JM)	6/2/1926 and converted to W2 class in December 1929.	Camberwell depot	sold on 8/7/1981 to Maher Transport who resold it to a private buyer in Coldstream Vic.
W 398. (JM)	23/2/1926 and converted to W2 class in January 1931.	Malvern depot	sold on 19/6/1979 to Simsmetal Campbellfield Vic who broke it up.

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
W 399. (PW)	12/9/1926 and converted to W2 class in February 1930.	Essendon depot	initially sold on 20/12/1982 to the Tramway Museum Society of Victoria at Bylands and was sold to Paul Class of Gales Creek Enterprises of the USA in December 1989.
W 400. (PW)	13/9/1926 and converted to W2 class in April 1931.	Sth Melbourne Depot	sold on 27/8/1963 to a private buyer in Yambuk Vic.
W 401. (PW)	24/9/1926 and converted to W2 class in May 1932.	Camberwell Depot	sold on 17/5/1978 to a private buyer in Hay NSW.
W 402. (PW)	24/9/1926 and converted to W2 class in July 1930.	Essendon depot	sold on 6/5/1981 to a buyer (possibly G Bruckner & Assoc.) in Tullamarine Vic where burnt in January 1982.
W 403. (PW)	17/9/1926 and converted to W2 class in December 1932.	Sth Melbourne Depot	sold complete on 16/7/1986 to Paul Class of Gales Creek Enterprises of the USA who resold it to the San Jose Trolley Corp., Kelley Park San Jose CA for use as a spares car for VTA 531. The body is still at Kelley Park.
W 404. (PW)	22/9/1926 and converted to W2 class in October 1930.	Essendon depot	sold on 1/5/1963 to a private buyer in Marlo Vic. who converted it to a weekender.
W 405. (PW)	15/9/1926 and converted to W2 class in October 1930.	Malvern Depot	sold on 27/3/1981 to a buyer in Tullamarine Vic.
W 406. (PW)	19/10/1926 and converted to W2 class in June 1930.	Essendon Depot	sold on 31/7/1981 to a private buyer in Pearcedale Vic.
W 407. (PW)	5/10/1926 and converted to W2 class in May 1931.	Malvern Depot	sold in full working order on 18/2/1982 to the Melbourne Tramcar Preservation Association, Haddon Vic.
W 408. (PW)	21/10/1926 and converted to W2 class in October 1930.	Kew Depot	sold on 28/11/1980 to a buyer in Tullamarine Vic. who broke it up.
W 409. (PW)	27/9/1926 and converted to W2 class in November 1932.	Kew Depot	sold on 29/10/1982 to Gilbo Motors, Griffith NSW.
W 410. (PW)	22/10/1926 and converted to W2 class in October 1930.	Kew Depot	sold on 11/10/1983 to Maher Transport Thomastown Vic after a bad accident in April 1983.
W 411. (PW)	3/2/1927 and converted to W2 class in July 1930.	Brunswick Depot	sold on 4/3/1986 to a buyer in Maroubra NSW for use as a restaurant. recently transferred to the Sydney Tramway Museum, Loftus NSW minus a cab, so W2 560 ex Port Kembla was used to supply a replacement. it is now in use as the Christchurch NZ restaurant car.
W 412. (PW)	26/11/1926 and converted to W2 class in June 1931.	Kew Depot	sold on 14/12/1978 to the East Preston Technical School.
W 413. (PW)	8/2/1927 and converted to W2 class in June 1931.	Glenhuntly Depot	sold on 3/10/1966 to a private buyer in Robinvale Vic.
W 414. (PW)	17/2/1927 and converted to W2 class in July 1931.	Kew Depot	sold on 8/5/1978 to a private buyer in Kinglake Vic.
W 415. (PW)	2/2/1927 and converted to W2 class in February 1932.	Malvern Depot	sold on 26/3/1986 to a private buyer in Werribee Vic.
W 416. (PW)	7/2/1927 and converted to W2 class in November 1930.	Kew Depot	sold on 4/6/1980 to the Barooga (NSW) & District Lions Club.
W 417. (PW)	15/2/1927 and converted to W2 class in November 1930.	Kew Depot	originally sold on 25/5/1989 to a buyer in Brooklyn Vic. and was resold to an organisation in Memphis Tennessee in February 1990.
W 418. (PW)	22/2/1927 and converted to W2 class in August 1932.	Essendon Depot	sold on 27/3/1986 to a private buyer in Werribee Vic.
8.2 W1 Class 419 to 438			
W1 419. (PW)	13/11/1926 and converted to W2 class in August 1937.	Kew Depot	cut up on 8/12/1976.
W1 420. (PW)	4/6/1927 and converted to W2 class in February 1937.	Glenhuntly Depot	sold on 27/2/1963 to Salesian Brothers College, Chadstone Vic. and was later broken up.
W1 421. (PW)	25/5/1927 and converted to W2 class in September 1936.	Malvern Depot	sold in full working order on 25/10/1985 to the Bendigo Trust for use as part of the Trust's "Talking Tram" fleet. It is Currently being restored at Bendigo to W1 configuration.
W1 422. (PW)	31/3/1927 and converted to W2 class in November 1936.	Glenhuntly Depot	sold on 27/4/1982 to the Nepean Centre for the Handicapped, Frankston Vic.
W1 423. (PW)	19/3/1927 and converted to W2 class in August 1936.	Glenhuntly Depot	sold on 27/2/1963 to St John of God Kindergarten, Cheltenham Vic. and subsequently broken up.
W1 424. (PW)	8/4/1927 and converted to W2 class in June 1937.	Sth Melbourne Depot	sold on 23/4/1979 to a private buyer in Hay NSW.
W1 425. (PW)	20/4/1927 and converted to W2 class in June 1937.	Brunswick Depot	sold on 7/4/1986 to a private buyer in Cranbourne Vic.
W1 426. (PW)	6/8/1926 and converted to SW2 class in April 1938.	Glenhuntly Depot	This tram and three others were converted from W1 class to SW2 class (the S in the classification means it has sliding doors) to test the doors to be fitted to SW6 class trams. sold complete after accident damage on 24/8/1987 to the Perth Electric Transport Museum, Whiteman Park, WA on 9/3/1988. The tram arrived at Whiteman Park on 15/3/1988 and was fully restored.
W1 427. (PW)	28/4/1927 and converted to W2 class in May 1937.	Essendon Depot	sold in full working order on 14/10/1985 to the Tramway Museum Society of Victoria, Bylands Vic. who have restored it to W1 class.
W1 428. (PW)	28/5/1927 and converted to W2 class in November 1936.	Essendon Depot	sold on 5/12/1977 to a business in Macclesfield Vic.
W1 429. (PW)	9/12/1926 and converted to W2 class in October 1936.	Glenhuntly Depot	sold on 11/7/1967 to a private buyer in Robinvale Vic.
W1 430. (PW)	7/6/1927 and converted to W2 class in July 1937.	Glenhuntly Depot	burnt on 16/9/1963.
W1 431. (PW)	13/6/1927 and converted to W2 class in July 1937.	Preston Depot	withdrawn from regular service in May 1986 after having run 2,404,556 kilometers. sent to Preston Tramway Workshops in October 1987 and emerged in February 1988 as a fully restored W1 class tram. placed straight into the Heritage Fleet.
W1 432. (PW)	18/6/1927 and converted to SW2 class in October 1938.	Glenhuntly Depot	This tram, one of the four trams rebuilt with experimental sliding doors, was sold in full running order on 25/2/1988 to the Newcastle Tramway Museum, Maitland NSW. When this museum was placed into receivership, obtained by the Sydney Tramway Museum, Loftus NSW.
W1 433.	1/7/1927 and converted to W2 class in January 1937.	Malvern Depot	sold to a buyer in Brooklyn Vic on 31/3/1988 and was resold to an American client in February 1991.
W1 434. (PW)	8/7/1927 and converted to W2 class in March 1937.	Brunswick depot	sold on 19/7/1984 to Maher Transport Thomastown Vic. who resold it to a private buyer in Alice Springs NT. It then went to a buyer in Springton SA where stripped for spare parts by the Australian Electric Transport Museum and was burnt by the local CFS (fire brigade) in 1993 as an exercise, the car being in extremely poor condition.
W1 435. (PW)	15/7/1927 and converted to W2 class in May 1937.	Glenhuntly Depot	sold on 10/4/1986 to a private buyer in Sale Vic.
W1 436. (PW)	22/7/1927 and converted to SW2 class in February 1938.	Preston Depot	One of the four SW2 conversions from W1 class, this tram was originally sold to a private buyer in Noojee Vic. along with W2 260 and W2 581.then resold to a private buyer in South Melbourne who stored it in the back of an auto repair shop in Clarendon St Sth Melbourne. When the owner moved to New Zealand, he left the tram in Sth Melbourne until shipped to NZ in 1998. The owner now has the tram at Masterton NZ on unmotored trucks and does not wish the tram to be accessible to the public.
W1 437. (PW)	4/8/1927 and converted to W2 class in April 1937.	Sth Melbourne Depot	sold 2/9/1982 to the Willows Lodge Caravan Park, Rosebud Vic. and resold to the Dandenong Trout Farm.
W1 438. (PW)	11/8/1927 and converted to W2 class in July 1937.	Malvern Depot	stored at Essendon Depot from August 1978 until sold on 2/9/1980 to a private buyer in Yuroke Vic.
8.3 W2 Class 439 to 458			
W2 439. (PW)	30/7/1927.	Glenhuntly Depot	439 was the first tram to be built as a W2 class. A further ten trams (470 - 479) were built in 1928 as W1 class. sold on 1/12/1987 to a buyer in Brooklyn Vic.,

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
			then to a private buyer in Frankston Vic. then returned to Brooklyn and finally sold to a private buyer in Perth WA. at Kewdale WA on 20/10/1988.
W2 440. (PW)	18/8/1927.	Kew Depot	sold on 26/6/1986 to a private buyer in Brooklyn Vic.
W2 441. (PW)	19/8/1927.	Sth Melbourne Depot	painted in a special colour scheme in 1984 to celebrate the 150th anniversary of the State of Victoria. sold in full working order retaining its special colour scheme on 28/9/1988 to the Bendigo Trust and is part of the Trust's Talking Tram fleet.
W2 442. (PW)	29/8/1927	South Melbourne Depot	withdrawn from regular service in May 1986 after running 2,451,954 kilometres and was sold to the Colonial Tramcar Restaurant who rebuilt and air-conditioned it to operate around Melbourne as a restaurant tram, numbered 01.
W2 443. (PW)	23/8/1927 .	Glenhuntly Depot	sold on 29/6/1968 to a private buyer in Robinvale Vic.
W2 444. (PW)	12/9/1927.	Sth Melbourne Depot	painted as a Transporting Art car in 1981 by Trevor Nickolls. sold on 30/11/1987 to a buyer in Brooklyn Vic. and resold to a buyer in Perth WA. It arrived at Kewdale WA on 22/11/1988.
W2 445. (PW)	10/9/1927.	Glenhuntly Depot	sold on 14/11/1980 to G. Bruckner & Assoc., Tullamarine Vic and resold to a buyer in Brooklyn Vic. after a crane went through its roof on offloading.
W2 446. (PW)	16/9/1927.	Kew Depot	This tram also went to Brooklyn via Bruckner's. sold on 1/12/1980.
W2 447. (PW)	19/9/1927.	Essendon depot	sold on 2/4/1980 to the Canberra Tradesman's Union Club, Dickson St Badham ACT. It can be seen to the right of the main entrance to the club as one enters from the main car park.
W2 448. (PW)	29/9/1927.	Kew depot	sold on 30/3/1979 to a private buyer in Hay NSW.
W2 449. (PW)	8/10/1927.	Essendon depot	sold on 16/4/1980 to a private buyer in Beaumaris Vic.
W2 450. (PW)	10/10/1927.	Kew depot	sold on 30/5/1983 to a private buyer in Somerville Vic.
W2 451. (PW)	7/11/1927.	Kew Depot	sold on 13/8/1981 to the Broadbeach Caravan Park, Inverloch Vic.
W2 452. (PW)	22/10/1927.	Glenhuntly Depot	sold on 16/4/1964 to a private buyer in Hay NSW.
W2 453. (PW)	12/11/1927.	Malvern depot	sold on 27/11/1986 to a private buyer in Monbulk Vic.
W2 454. (PW)	3/12/1927.	Essendon Depot	sold on 7/8/1981 to Maher Transport Thomastown Vic. who resold it to a private buyer in Dunolly Vic.
W2 455. (PW)	10/12/1927.	Malvern depot	sold on 18/9/1981 to a private buyer in Kilmore Vic.
W2 456. (PW)	12/12/1927.	Sth Melbourne Depot	sold in full working order on 29/9/1988 to the Bendigo Trust after running 2,425,479 km. in regular service up to May 1986. Its first run in Bendigo was on 27/11/1988.
W2 457. (PW)	19/12/1927.	Kew Depot	sold complete on 7/12/1978 to the Children's Driving School, cnr Lawson and Albion Sts Essendon Vic. The tram has since moved to the Tramway Museum Society of Victoria, Bylands Vic., being replaced by SW6 968.
W2 458. (PW)	21/12/1927.	Kew depot	sold on 1/3/1983 to the Footscray Institute of Technology. It is Currently (January 2002) located at the Victoria University of Technology Werribee Campus, Old Snydes Rd, Hoppers Crossing Vic.
459 to 468			were X1 class 4 wheel trams based at Footscray depot. 467 is preserved at the Tramway Museum Society of Victoria, Bylands Vic.
469			Y class tram retained in the PTC Heritage Fleet.
8.4 W1 Class 470 to 479			
W1 470. (PW)	23/3/1928 and converted to W2 class in June 1937.	Sth Melbourne depot	sold in full working order on 3/10/1988 to the Bendigo Trust for use as a Talking Tram. first used in Bendigo on 27/11/1988 and commissioned in Bendigo colours on 10/8/1989.
W1 471. (PW)	22/3/1928 and converted to W2 class in August 1937.	Glenhuntly depot	sold in full working order on 27/10/1988 to the Maitland Tramway Park & Museum, Maitland NSW after running 2,407,135 km. in regular service to May 1986. When the Maitland museum went into receivership, transferred to the Sydney Tramway Museum, Loftus NSW.
W1 472. (PW)	24/3/1928 and converted to W2 class in September 1937.	Kew depot	sold on 23/2/1982 to the Tramway Museum Society of Victoria, Bylands Vic. and resold to a private buyer in Yarra Glen Vic.
W1 473. (PW)	5/3/1928 and converted to W2 class in December 1936.	Malvern depot	sold on 13/10/1986 to a private buyer in Pheasant Creek Vic.
W1 474. (PW)	13/4/1928 and converted to W2 class in August 1937.	Essendon Depot	sold on 26/3/1981 to G Bruckner & Assoc., Tullamarine Vic.
W1 475. (PW)	18/4/1928 and converted to W2 class in July 1937.	Sth Melbourne Depot	sold on 26/9/1977 to a private buyer in Sth Morang Vic.
W1 476. (PW)	19/4/1928 and converted to W2 class in October 1938.	Essendon Depot	sold on 18/4/1978 to a private buyer in Pheasant Creek Vic.
W1 477. (PW)	20/4/1928 and converted to W2 class in September 1936.	Essendon Depot	sold on 8/10/1979 to a private buyer in Wentworth NSW.
W1 478. (PW)	21/4/1928 and converted to SW2 class in May 1938.	Malvern Depot	sold on 30/3/1988 in full working order to Paul; Class of Gales Creek Enterprises in the USA. resold to the Riverfront Streetcar Line in New Orleans, Louisiana and renumbered 454. When New Orleans built replica Perley Thomas cars for the streetcar line, 478 (454)was resold to MATA Memphis Tennessee and will retain its New Orleans number.
W1 479. (PW)	21/4/1928 and converted to W2 class in June 1936.	Sth Melbourne Depot	sold on 25/3/1981 to a private buyer in Cowes, Phillip Island, Vic.
8.5 W2 Class 480 to 653			
W2 480. (PW)	27/1/1928.	Malvern depot	sold on 12/10/1982 to a private buyer in Tatura Vic.
W2 481. (PW)	21/1/1928.	Kew Depot	sold on 2/11/1981 to a private buyer in Plenty Vic.
W2 482. (PW)	28/1/1928.	Camberwell depot	sold in full working order on 28/9/1979 to Paul Class of Gales Creek Enterprises in the USA who resold it to the Waterfront Streetcar Line, Seattle, Washington, USA where it runs in tourist service today.
W2 483. (PW)	21/2/1928.	Kew Depot	sold on 27/5/1986 to a private buyer in Duneed Vic.
W2 484. (PW)	3/2/1928.	Glenhuntly Depot	sold on 20/4/1978 to a private buyer in Tooradin Vic.
W2 485. (PW)	28/1/1928.	Glenhuntly Depot	converted to a sleeper carrier in 1964 for the Dandenong Rd reservation relay, where coupled to 4 - wheel ballast trailer 25. After the relay was finished, 485 was based at Sth Melbourne perway yard for use as a rerailing instruction car. burnt on 5/5/1970 after the MMTB had decided that too many bits had fallen off it after all that overturning and rerailing.
W2 486. (PW)	24/2/1928.	Essendon Depot	sold on 4/10/1985 to a private buyer in Barkers Creek Vic.
W2 487. (PW)	24/2/1928.	Malvern Depot	sold in 1993 to an unknown buyer.

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
W2 488. (PW)	29/2/1928.	Kew Depot	sold on 19/6/1979 to Simsmetal, Brooklyn Vic.
W2 489. (PW)	3/3/1928.	Kew Depot	sold on 10/9/1980 to a private buyer in Ferntree Gully Vic.
W2 490. (PW)	9/5/1928.	Kew Depot	sold on 9/10/1986 to a private buyer in Sth Yarra Vic.
W2 491. (PW)	21/5/1928.	Sth Melbourne Depot	sold on 22/5/1980 after having been stored at Malvern Depot from June 1977 to a private buyer in Hallam Vic.
W2 492. (PW)	28/5/1928.	Camberwell Depot	sold on 1/8/1980 to Ferguson's Winery, Yarra Glen Vic.
W2 493. (PW)	7/6/1928.	Sth Melbourne Depot	sold on 3/10/1986 to a private buyer in Templestowe Vic.
W2 494. (PW)	23/6/1928.	Essendon Depot	burnt on 6/9/1963.
W2 495. (JM)	24/2/1928.	Glenhuntly Depot	sold on 8/10/1979 to a private buyer in Mansfield Vic.
W2 496. (JM)	18/2/1928.	Sth Melbourne Depot	sold in full working order to Paul Class of Gales Creek Enterprises in the USA who resold it to the San Francisco Municipal Railway (MUNI). MUNI rebuilt and recanvassed the tram in October 1989.
W2 497. (JM)	16/3/1928.	Glenhuntly depot	painted as a Transporting Art Car in 1979 by Erica McGilchrist. sold in full working order on 3/12/1987 to Gomaco Trolley Co. of Ida Grove, Iowa USA.
W2 498. (JM)	24/4/1928.	Glenhuntly depot	sold on 25/10/1979 to a private buyer in Mansfield Vic.
W2 499. (JM)	16/4/1928.	Essendon Depot	sold on 15/4/1977 to the Melbourne Tramcar Preservation Association, Haddon Vic. They exchanged the tram for Ballarat 42 at Creswick Vic. and 499 was donated to the Tramway Museum Society of Victoria, Bylands Vic. in March 1982.
W2 500. (JM)	27/4/1928.	Glenhuntly Depot.	sold on 8/7/1981 to Maher Transport, Thomastown Vic who resold it to a private buyer in Bittern Vic.
W2 501. (JM)	24/5/1928.	Malvern Depot.	sold on 29/10/1981 to Maher Transport Thomastown Vic. who resold the tram to a buyer in the USA (possibly Gomaco), the electrics going in 1989 and the body in March 1991.
W2 502. (JM)	23/4/1928.	Glenhuntly Depot.	painted as a <i>Transporting Art</i> Car in 1981 by Rosemary Ryan. sold on 4/12/1978 to a buyer in Brooklyn Vic and was resold to the USA, the electrics going in 1989 and the body in March 1991.
W2 503. (JM)	16/4/1928.	Malvern Depot.	painted as a <i>Transporting Art</i> car in 1981 by John Nixon. sold on 25/11/1987 to a buyer in Brooklyn Vic. who resold it to a buyer in Green Bay, Wisconsin USA in May 1988.
W2 504. (JM)	18/4/1928.	Preston Depot.	painted as a <i>Transporting Art</i> car by noted Australian painter, Clifton Pugh. It was involved in an accident in August 1986 and was repaired at Preston Workshops in May 1990. It is Currently held by the Dept of Infrastructure for the State Museum of Victoria.
W2 505. (JM)	21/4/1928.	Sth Melbourne Depot.	sold on 12/5/1977 to the Melbourne Tramcar Preservation Society , Haddon Vic. who broke it up and used parts of the tram to repair W2 499.
W2 506. (JM)	1/5/1928.	Essendon Depot.	sold on 4/5/1981 to the Tooradin Primary School.
W2 507. (JM)	7/5/1928.	Glenhuntly Depot.	sold on 22/6/1981 to St John's Ambulance, Tooradin Vic.
W2 508. (JM)	14/5/1928.	Kew Depot.	burnt on 22/9/1967.
W2 509. (JM)	13/6/1928.	Kew Depot.	sold on 27/3/1984 to the Tramway Museum Society of Victoria, Bylands Vic.
W2 510. (JM)	8/6/1928.	Malvern Depot.	sent to Preston Workshops in September 1987, restored to mid 1960's condition by December 1987 and transferred to Sth Melbourne Depot on 19/2/1988. It is now in the PTC Heritage Fleet .
W2 511. (JM)	25/9/1928.	Glenhuntly Depot.	sold on 20/8/1981 to Maher Transport Thomastown Vic. who resold it to a private buyer in Heathcote Vic.
W2 512. (JM)	5/7/1928.	Kew Depot.	sold in full working order on 7/6/1978 to Paul Class of Gales Creek Enterprises in the USA, and is now owned by the King County Metro Transit, Seattle USA who operate it on their Waterfront Streetcar Line .
W2 513. (JM)	22/9/1928.	Malvern Depot.	sold on 12/2/1986 to a private buyer in Trentham Vic.
W2 514. (JM)	21/6/1928.	Malvern Depot.	sold on 3/8/1982 to the Life Christian Academy, Waranwood Vic. The tram is Currently (December 2001) for sale in Kerang Victoria, having been converted to a dwelling complete with pot belly stove.
W2 515. (JM)	28/6/1928.	Glenhuntly Depot.	sold on 2/12/1982 to Maher Transport Thomastown Vic. who resold it to a private buyer in Whittlesea Vic.
W2 516. (JM)	12/10/1928.	Essendon Depot.	sold on 10/5/1979 to McDonalds Doncaster Vic.
W2 517. (JM)	27/9/1928.	Malvern Depot.	well travelled tram was sold on 1/5/1986 to a private buyer in Werribee Vic. then to a buyer in Brooklyn Vic. and has ended up somewhere in Brisbane.
W2 518. (JM)	2/8/1928.	Camberwell Depot.	sold in full working order on 2/2/1978 to Paul Class of Gales Creek Enterprises in the USA and is now owned by King County Metro Transit, Seattle USA who operate it on their Waterfront Streetcar Line .
W2 519. (JM)	24/8/1928.	Brunswick Depot.	sold along with W2 237 on 22/10/1964 to a private buyer in Mansfield Vic.
W2 520. (JM)	10/8/1924.	Kew Depot.	sold on 4/11/1983 to singer Elton John who had placed it in his garden in Windsor UK. The tram is now at Sir Elton's home in Berkshire where his boyfriend David uses it as an office.
W2 521. (JM)	27/8/1928.	Glenhuntly Depot.	sold on 10/7/1986 to a buyer in Brooklyn Vic.
W2 522. (JM)	28/8/1928.	Essendon Depot.	sold on 4/9/1981 to a buyer in Bylands Vic and was resold to a buyer in Brooklyn Vic.
W2 523. (JM)	22/9/1928.	Sth Melbourne Depot.	sold on 2/5/1986 to a private buyer in Whittlesea Vic.
W2 524. (JM)	26/9/1928.	Malvern Depot.	sold on 10/7/1986 to a buyer in Brooklyn Vic and resold in November 1991 to a private buyer in Craigieburn Vic. 524 was the last tram to be built by outside contractors. All future W class trams were built at Preston Workshops.
W2 525.	29/6/1928.	Glenhuntly Depot.	Painted as a <i>Transporting Art</i> car in 1978 by Les Kossatz.painted white with little sheep all over it. sold in full working order on 4/12/1987 to the Gomaco Trolley Co. of Ida Grove, Iowa USA, who resold the body to King County Metro Transit, Seattle USA where it is Currently stored at their repair shops in Tukwila Washington, about 30 km from Seattle.
W2 526.	18/6/1928.	Glenhuntly Depot.	sold on 25/11/1986 to a private buyer in Keysborough Vic.
W2 527.	19/6/1928.	Malvern Depot.	sold on 8/2/1978 to a private buyer in Hay NSW and ended up in Narrandera NSW with W2 536.
W2 528.	7/7/1928.	Kew Depot.	sold on 30/9/1981 to a private buyer in Thomastown Vic and ended up in Mildura Vic.
W2 529.	9/8/1928.	Kew Depot.	sold on 4/2/1980 to the Queenscliff Ministering Children's League.
W2 530.	14/7/1928.	Malvern Depot.	sold on 25/8/1980 to a private buyer in Congupna Vic.
W2 531.	14/8/1928.	Brunswick Depot.	sold in full working order on 16/7/1986 to Paul Class of Gales Creek Enterprises in the USA who resold it to the Santa Clara Valley Transportation Authority , San Jose, California which has restored the tram and converted it to SW2 style.
W2 532.	21/7/1928.	Kew Depot.	sold on 6/8/1986 to a private buyer in Rosebud Vic and was moved to Red Hill Vic in November 1986.
W2 533.	22/9/1928.	Camberwell Depot.	converted to a pantograph testing car to test four types of pantograph to decide suitability of pantos for A and B class trams that were to be used on the St Kilda and Port Melbourne light rail lines, and was the first revenue W2 class tram to Port Melbourne, carrying enthusiasts on a special charter.badly burnt in a fire set

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
			by vandals at Thornbury Depot on 25/12/1989, and what was left off-sold to the Gomaco Trolley Company in the USA on 30/1/1991.
W2 534.	27/9/1928.	Camberwell Depot.	sold on 30/9/1981 to Maher Transport Thomastown Vic who resold it to a private buyer in Mitiamo Vic.
W2 535.	8/9/1928.	Glenhuntly Depot.	sold on 4/2/1982 to Maher Transport who resold it to a private buyer in Coldstream Vic.
W2 536.	17/9/1928.	Kew Depot.	sold on 23/11/1978 to a private buyer in Hay NSW and ended up in Narrandera NSW with W2 527.
W2 537.	22/9/1928.	Kew Depot	sold on 24/4/1987 to the Heathcote Park Dragway.
W2 538.	25/9/1928.	Sth Melbourne Depot.	sold on 14/11/1979 to a private buyer in Mansfield Vic.
W2 539.	2/11/1928.	Sth Melbourne Depot.	sold in full working order on 18/8/1986 to the Gomaco Trolley Co. Ida Grove, Iowa USA who resold it to the MATA Memphis Tennessee.
W2 540.	3/11/1928.	Kew Depot.	sold in full working order on 24/3/1986 to Gomaco Trolley Co. Ida Grove, Iowa USA who resold it to MATA Memphis Tennessee.
W2 541.	2/11/1928.	Malvern Depot.	sold on 4/11/1981 to a private buyer in Baxter Vic.
W2 542.	10/11/1928.	Malvern Depot	sold on 13/5/1986 to a private buyer in Briagolong Vic.
W2 543.	17/11/1928.	Essendon depot.	sold on 9/9/1981 to Maher Transport Thomastown Vic who resold it to a private buyer in Avoca Vic.
W2 544.	9/11/1928.	Kew Depot.	sold on 9/7/1981 to G. Bruckner & Assoc., Tullamarine Vic. and burnt in January 1982.
W2 545.	2/2/1929.	Kew Depot.	sold in full working order on 9/8/1986 to Gomaco Trolley Co. Ida Grove, Iowa USA who resold it to MATA Memphis Tennessee.
W2 546.	19/12/1928.	Kew Depot.	sold on 1/8/86 to a buyer in Brooklyn Vic.
W2 547.	12/12/1928.	Malvern Depot.	After running 2,637,457km. in regular service, sold on 22/11/1991 to Fergusons Winery Yarra Glen Vic. with W2 492.
W2 548.	21/2/1929.	Essendon Depot.	sold on 23/5/1984 to a private buyer in Sth Morang Vic.
W2 549.	8/2/1929.	Camberwell Depot.	burnt on 15/9/1967.
W2 550.	23/2/1929.	Glenhuntly Depot.	sold on 6/3/1979 to a private buyer in Goulburn NSW.
W2 551.	23/2/1929.	Essendon Depot.	sold on 7/8/1981 to Maher Transport Thomastown Vic. who resold it to a private buyer in Mickleham Vic.
W2 552.	28/3/1929.	Malvern Depot.	sold on 24/7/1986 to a private buyer in Ballarat Vic.
W2 553.	23/3/1929.	Malvern Depot.	sold on 27/3/1985 to the Gomaco Trolley Co., Ida Grove Iowa USA who restored it and then sold it to MATA Memphis Tennessee.
W2 554.	23/3/1929.	Glenhuntly Depot.	sold on 8/5/1980 to a private buyer in Trafalgar Vic.
W2 555.	28/2/1929.	Essendon Depot.	sold on 21/2/1984 to Maher Transport Thomastown Vic.
W2 556.	28/3/1929.	Sth Melbourne Depot.	sold on 27/3/1986 to a private buyer in Riddel's Creek Vic., then to a buyer in Brooklyn Vic in February 1989 and converted to a "hamburger kitchen" in July 1989.
W2 557.	20/4/1929.	Preston Depot.	sold on 8/7/1981 to Maher Transport Thomastown Vic. who resold it to a private buyer in Warragul Vic.
W2 558.	13/7/1929.	Essendon Depot.	sold on 15/7/1981 to Mahers Transport who resold it to a private buyer in Heathcote Vic.
W2 559.	25/7/1929.	Preston Depot.	sold on 16/10/1978 to Southmoor Primary School, Moorabbin Vic.
W2 560.	16/8/1929.	Essendon Depot.	sold in full working order on 10/5/1984 to a private buyer in Port Kembla NSW who wanted to run it there along with two other W2 class trams, 370 and 577. This venture never got off the ground and the three trams were left rotting in Port Kembla's polluted industrial air until purchased by the Sydney Tramway Museum in 1999. 560 was deemed too far gone to economically restore, so broken up and parts used in the restoration of W2 411.
W2 561.	12/7/1929.	Glenhuntly Depot.	sold on 7/8/1981 to Maher Transport Thomastown Vic. who resold it to a private buyer in Costerfield Vic.
W2 562.	30/7/1929.	Glenhuntly Depot.	sold on 25/9/1979 to a private buyer in Skye Vic.
W2 563.	14/6/1929.	Glenhuntly Depot.	sold on 9/5/1985 to a private buyer in Seville Vic. later moved to Glenrowan Vic. and was transferred to Staffords Rd Warrnambool Vic. on 10/2/2002 for use as a B & B sitting on concrete blocks.
W2 564.	3/8/1929.	Preston Depot.	sold on 17/10/1985 to a private buyer in Ellimynt Vic.
W2 565.	1/8/1929.	Sth Melbourne Depot.	sold on 29/5/1989 to a buyer in Brooklyn Vic. The electrics went to America in 1989 and the body in March 1991.
W2 566.	11/7/1929.	Kew Depot.	sold on 16/9/1981 to a private buyer in Glen Alvie Vic.
W2 567.	9/8/1929.	Sth Melbourne Depot.	Painted twice as a <i>Transporting Art</i> Car, by Peter Corrigan in 1978 and Paul Mason in 1982. sold on 1/12/1987 to a buyer in Brooklyn Vic. The electrics went to the Gomaco Trolley Co. Ida Grove, Iowa USA in 1989 and the body is Currently at Mullumbimby NSW in use as an office for "The Old Mill Timberyard", still in its <i>Transporting Art</i> colour scheme.
W2 568.	23/5/1929.		After running 2,141,593 km. in regular service, bought privately and is Currently stored at the leased North Fitzroy tram Depot
W2 569.	15/6/1929.	Malvern Depot.	sold on 20/8/1981 to Maher Transport Thomastown Vic. who resold it to a private buyer in Heathcote Vic.
W2 570.	7/3/1929.	Essendon depot.	sold on 7/8/1981 to Maher Transport who resold it to a private buyer in Orbost Vic.
W2 571.	9/8/1929.	Essendon Depot.	sold on 12/8/1982 to Sutherland Homes for Children, Diamond Creek Vic.
W2 572.	21/9/1929.	Malvern Depot.	sold on 15/9/1981 to a private buyer in Jindivik Vic.
W2 573.	21/9/1929.	Essendon Depot.	sold on 12/9/1980 to a superphosphate dealer in Swan Hill Vic. who used it as a lunch room, and allowed the Bendigo Trust to remove some spare parts from it. resold to a local farmer in 1996.
W2 574.	14/9/1929.	Malvern Depot	sold on 31/7/1980 to a private buyer in Traralgon Vic.
W2 575.	15/8/1929.	Glenhuntly Depot	sold on 10/7/1986 to a buyer in Brooklyn Vic. who resold it in November 1991 to a private buyer in Craigieburn Vic.
W2 576.	21/9/1929.	Essendon Depot	sold on 12/6/1981 to a private buyer in Traralgon Vic.
W2 577.	27/9/1929.	Essendon Depot	sold on 10/5/1984 to a buyer in Port Kembla NSW along with W2's 370 and 560 who intended to use them as a tourist operation. The plan failed, and the trams stayed at Port Kembla until 1999 when they were obtained by the Sydney Tramway Museum and transported to the museum in Loftus NSW.
W2 578.	24/9/1929.	Glenhuntly Depot	sold on 14/9/1982 to Maher Transport Thomastown Vic. who resold it to a private buyer in Maryknoll Vic.
W2 579.	10/9/1929.	Glenhuntly Depot	Sold complete on 20/11/1985 to Wobbie's World, a children's playground in Springvale Rd Nunawading.
W2 580.	31/8/1929.	Malvern Depot	sold on 31/8/1929 to the Heathcote Park Dragway.
W2 581.	6/9/1929.	Essendon Depot	sold on 4/2/1982. to Maher Transport Thomastown Vic who resold it to a private buyer in Noojee Vic.
W2 582.	18/9/1929.	Glenhuntly Depot	sold on 6/4/1982 to the Coburg High School.
W2 584.	14/10/1929.	Glenhuntly Depot	sold on 4/11/1982 to a buyer in Thomastown Vic. (may not have been Maher's).
W2 585.	14/10/1929.	Glenhuntly Depot	sold on 27/4/1979 to a private buyer in Hay NSW and was noted at Grong Grong NSW in May 1989.
W2 586.	14/9/1929.	Preston Depot	sold on 18/8/1986 to Paul Class of Gales Creek Enterprises in the USA who resold it to the San Francisco MUNI for use as a spare parts car.
W2 587.	22/10/1929.	Glenhuntly Depot	sold on 21/3/1988 to a buyer in Brooklyn Vic.

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
W2 588.	26/10/1929.	Glenhuntly Depot	sold on 15/11/1979 to a private buyer in Taylor's Lakes Vic.
W2 589.	2/11/1929.	Glenhuntly Depot	sold on 23/2/1981 to a buyer in Tullamarine Vic who subsequently broke it up.
W2 590.	12/11/1929.	Essendon Depot	sold on 4/5/1979 to a private buyer in Hay NSW, then it went to Ivanhoe NSW and arrived in Canberra ACT in December 1986.
W2 591.	26/11/1929.	Essendon Depot	sold on 30/5/1978 to a private buyer in Mansfield Vic.
W2 592.	20/11/1929.	Glenhuntly Depot	sold on 8/6/1982 to Maher Transport Thomastown Vic who resold it to a private buyer in Broadmeadows Vic.
W2 593.	9/12/1929.	Sth Melbourne Depot	sold on 1/12/1982 to Mahers transport who resold it to a private buyer in Bailston Vic.
W2 594.	6/12/1929.	Malvern Depot	sold on 12/11/1981 to a private buyer in Croydon Vic.
W2 595.	16/12/1929.	Essendon Depot	sold on 29/10/1981 to Mahers Transport who resold it to a private buyer in Moyston Vic.
W2 596.	20/12/1929.	Sth Melbourne Depot	sold on 19/9/1986 to a private buyer in Mt Martha Vic.
W2 597.	11/1/1930.	Essendon Depot	sold on 14/3/1986 to the Waverley Meadows Primary School.
W2 598.	20/1/1930.	Essendon Depot	sold on 24/11/1981 to Maher Transport Thomastown Vic.
W2 599.	27/1/1930.	Brunswick Depot	sold on 25/5/1978 to a private buyer in Mansfield Vic.
W2 600.	7/2/1930.	Malvern depot	After running 2,420,959 km. in regular service until May 1986, 600 was placed unrestored in the Heritage Fleet.
W2 601.	15/2/1930.	Malvern Depot	sold in full working order on 30/9/1985 to Paul Class of Gales Creek Enterprises in the USA. It now operates along with W2 606 at the Iron Range Center, Chisholm Minnesota.
W2 602.	22/2/1930.	Sth Melbourne Depot	sold on 2/5/1986 to a private buyer in Whittlesea Vic.
W2 603.	28/2/1930.	Kew Depot	sold on 1/10/1981 to a private buyer in Bundoora Vic.
W2 604.	7/3/1930.	Glenhuntly Depot	sold on 22/4/1986 to a private buyer in Werribee Vic. and was resold to a buyer in Brooklyn Vic.
W2 605.	13/3/1930.	Malvern Depot	sold on 30/3/1988 in full working order to Gales Creek Enterprises of the USA who resold it to the King County Metro of Seattle for use on their Waterfront Streetcar Line.
W2 606.	22/3/1930.	Glenhuntly Depot	sold on 24/3/1986 to Gales Creek Enterprises who resold it to the Iron Range Center< Chisholm Minnesota with W2 601.
W2 607.	29/3/1930.	Malvern Depot	painted as a Transporting Art car by Craig Gough in 1979. sold on 26/11/1987 to a buyer in Brooklyn Vic. The electrics went to America in 1989 and the body in March 1991.
W2 608.	5/4/1930.	Malvern Depot	sold on 3/7/1986 to a private buyer in Cavan SA, then to Hungry Jacks Fulham SA where the AETM obtained some spare parts in exchange for two trolley poles. resold to the same buyer in Cavan SA and was finally sold in 1996 to a private buyer in Mildura Vic. It was sighted in a Mildura wrecker's yard in 1999, and was sold to a private buyer in San Remo, Phillip Island, and Victoria.
W2 609.	2/5/1930.	Kew Depot	sold on 2/11/1984 to a private buyer in Montmorency Vic.
610 to 623			Y1 class, an improvement on Y 469 with angled windscreens and larger wheels. Only 610 to 613 were built, union opposition to their possible use as one man trams finished the rest, and the numbers were never allocated to other trams.
W2 624.	11/6/1930.	Malvern Depot	sold on 20/11/1985 to Wobbie's World, a children's playground in Springvale Rd, Nunawading.
W2 625.	14/6/1930.	Brunswick Depot	sold on 24/7/1986 to a buyer in Brooklyn Vic and was resold to a buyer in Ballarat Vic.
W2 626.	19/6/1930.	Malvern Depot	sold in full working order to the Gomaco Trolley Co. of Ida Grove, Iowa USA and resold to New Orleans, where converted to SW2 type and renumbered 452. The tram has since been moved to MATA Memphis Tennessee and will retain its New Orleans number.
W2 627.	26/6/1930.	Kew Depot	sold on 6/7/1983 to Maher Transport Thomastown Vic. who resold it to a private buyer in Ocean Grove Vic. with W2 221.
W2 628.	2/7/1930.	Kew Depot	sold on 17/10/1978 to a private buyer in Koondrook Vic.
W2 629.	10/7/1930.	Glenhuntly depot	sold on 31/10/1986 to a private buyer in Beveridge Vic.
W2 630.	25/7/1930.	Camberwell Depot	sold on 3/4/1981 to a private buyer in Brooklyn Vic.
W2 631.	5/8/1930.	Glenhuntly Depot	sold on 10/7/1981 to G Bruckner, Tullamarine and was resold to a buyer in Mt Eliza Vic in October 1982.
W2 632.	20/8/1930.	Glenhuntly Depot	sold on 25/5/1978 to a private buyer in Hay NSW.
W2 633.	9/8/1930.	Glenhuntly Depot	sold on 24/5/1983 to the Caloola Association, Croydon Vic.
W2 634.	16/8/1930.	Sth Melbourne Depot	sold on 2/9/1986 to a buyer in Brooklyn Vic.
W2 635.	22/8/1930.	Essendon Depot	sold on 14/5/1982 to Maher Transport Thomastown Vic.
W2 636.	29/8/1930.	Brunswick Depot	sold on 25/7/1986 to a buyer in Brooklyn Vic and was resold in November 1991 to a buyer in Craigieburn Vic and was subsequently broken up.
W2 637.	16/9/1930.	Kew Depot	sold in full working order on 15/5/1984 to the Newcastle Tramway Museum at Maitland NSW. When this museum went into receivership, the Sydney Tramway Museum at Loftus NSW bought the tram.
W2 638.	25/9/1930.	Kew Depot	sold on 29/3/1983 to a private buyer in Daylesford Vic.
W2 639.	8/10/1930.	Sth Melbourne Depot	sold on 12/9/1979 to a private buyer in Merricks Vic.
W2 640.	10/10/1930.	Preston Depot	sold on 16/11/1983 to Maher Transport Thomastown Vic.
W2 641.	17/10/1930.	Glenhuntly Depot	sold on 14/2/1984 to the Cockatoo Primary School in the Dandenong Ranges.
W2 642.	17/10/1930.	Preston Depot	sold on 12/6/1981 to a private buyer in Traralgon Vic.
W2 643.	25/10/1930.	Preston Depot	sold in full working order on 5/12/1986 to the Tramway Museum Society of Victoria, Bylands Vic. where it is part of the museum's fleet of working trams.
W2 644.	1/11/1930 and converted to SW2 class in 1953.	Sth Melbourne Depot	withdrawn from service on 17/12/1987 and placed on loan to the Tramway Museum Society of Victoria.
W2 645.	8/11/1930.	Kew Depot	sold on 19/5/1982 to Maher Transport Thomastown Vic. who resold it to a private buyer in Melton Vic.
W2 646.	26/11/1930.	Preston Depot	After running 1,966,940 km. in regular service, including being the last W2 class tram in regular service, 646 was placed unrestored into the Heritage Fleet.
W2 647.	29/11/1930.	Sth Melbourne Depot	sold on 16/4/1986 to a private buyer in Somerville Vic.
W2 648.	17/12/1930.	Sth Melbourne Depot	sold in full working order on 11/5/1983 to the San Francisco Chamber of Commerce, and is now at the Western Railway Museum in Rio Vista Junction, California. It featured in the 1983 through 1986 Trolley Festivals in San Francisco.
W2 649.	20/12/1930.	Essendon Depot	sold on 4/11/1982 to Maher Transport Thomastown Vic., who resold it to a private buyer in Bacchus Marsh Vic. sighted on 9/1/2002 in use as a cafe at the Mt Isa Irish Association, Mt Isa Qld.
W2 650.	20/12/1930.	Preston Depot	After running 2,457,764 km. in regular service, placed in the Heritage Fleet and stored at Hawthorn Depot in July 1989.
W2 651.	3/2/1931.	Brunswick depot	sold on 30/6/1980 to a private buyer in Yarrambat Vic.
W2 652.	8/3/1931.	Brunswick Depot	sold on 29/4/1980 to a private buyer in Ashburton Vic.

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
W2 653.	3/6/1931.	Glenhuntly Depot	sold on 28/4/1980 to a private buyer in Donnybrook Vic.
8.6 W3 Class trams 654 - 669 (16 trams)			
			The W3 class tram was introduced in 1930 when it became apparent that union opposition to the Y1 class with its potential for driver only operation would not be overcome. The trams were a modification of the W2 class and used parts already made for the cancelled Y1 class trams. They had steel framing and were fitted with larger 838mm wheels from scrapped S and T class trams in their MMTB type 9A trucks.
W3 654.	5/11/1930.	Brunswick Depot	burnt on 26/10/1967.
W3 655.	25/3/1931.	Sth Melbourne Depot	sold on 6/7/1976 to Lance Smith Excavations, Vermont Vic. and was noted in November 1991 at Gruyere Vic.
W3 656.	18/5/1931.	Sth Melbourne Depot	sold on 19/7/1976 to the Melbourne Tramcar Preservation Society, Haddon Vic. who initially used it as a bunkhouse, but have since restored it.
W3 657.	20/6/1931.	Sth Melbourne Depot	sold on 18/12/1981 to the Tramway Museum Society of Victoria, Bylands Vic. who resold it to a buyer in Campbellfield Vic.
W3 658.	4/7/1931.	Sth Melbourne Depot	sold on 20/5/1976 to the Venito Social Club, Bulleen Vic. and subsequently broken up.
W3 659.	7/8/1931.	Sth Melbourne Depot	sold on 24/6/1976 to L Grollo & Co. who sited it at Lake Eildon.
W3 660.	26/11/1932.	Sth Melbourne Depot	sold on 29/11/1976 to a private buyer in Berwick Vic.
W3 661.	19/11/1932.	Sth Melbourne Depot	sold in full working order on 15/6/1976 to the Ballarat Tram Museum. It returned to Melbourne from 5/4/1989 to 2/7/1990.
W3 662.	20/12/1932.	Sth Melbourne Depot	sold on 28/4/1982 to Maher Transport Thomastown Vic. who resold it to a private buyer in Donnybrook Vic.
later broken up.			
W3 663.	27/11/1933.	Sth Melbourne Depot	sold in full working order on 31/5/1976 to the Melbourne Tramcar Preservation Society, Haddon Vic.
W3 664.	7/12/1933.	Essendon Depot	sold on 7/6/1976 to Kathy's Kitchen, Mirboo Nth Vic. who had it converted to a shop. It has since been sold to a private buyer in Boolarra Vic. on an unknown date.
W3 665.	15/2/1934.	Glenhuntly Depot	sold on 6/8/1982 to the Coburg Technical School. It has since been sold in 2002 to a private buyer in Wallan Vic.
W3 666.	19/2/1934.	Glenhuntly Depot	sold on 30/7/1976 to Galli Bros. Constructions Woolert Vic.
W3 667.	3/3/1934.	Brunswick Depot	sold in full working order on 17/5/1976 to the Tramway Museum Society of Victoria Bylands Vic.
W3 668.	10/3/1934.	Brunswick Depot	sold in full working order on 4/8/1977 to the Newcastle Tramway Museum Maitland NSW and sold to the Sydney Tram way Museum Loftus NSW.
W3 669.	26/4/1934.	Brunswick Depot	sold on 23/6/1976 to Lance Smith Excavations, Vermont Vic.
8.7 W4 Class trams 670 to 674 - 5 trams.			
W4 670.	13/11/1933.	Sth Melbourne Depot	sold in full working order on 23/4/1976 to the Melbourne Tramcar Preservation Association Haddon Vic.
W4 671.	9/7/1934.	Sth Melbourne Depot	sold in full working order on 28/6/1976 to the Ballarat Tram Museum.
W4 672.	29/9/1934.	Sth Melbourne Depot	sold on 12/5/1976 to Lance Smith Excavations Vermont Vic and subsequently broken up.
W4 673.	22/10/1934.	Sth Melbourne Depot	sold in full working order on 17/5/1976 to the Tramway Museum Society of Victoria Bylands Vic.
W4 674.	29/9/1935.	Sth Melbourne Depot	sold in full working order on 2/9/1976 to the Perth Electric Transport Museum Whiteman Park WA.
8.8 CW5/ W5 class trams 681 to 685 - 5 trams.			CW5 class trams were a hybrid tram designed to save money. They had a new body mounted on maximum traction trucks from withdrawn C class trams and controllers from C and S class trams. These trams were not successful (a T class single truck car beat a CW5 car on level trackage in Nicholson St Coburg one sunny Sunday) and decided not to proceed with any more hybrid trams. They were converted to W5 class in 1956. The numbers from 686 to 719, set aside for further trams, were not used except for 700, which was used for VR class 53 when renumbered to avoid duplication of a Z1 class tram number.
CW5 681.	19/1/1935		converted to SW5 class in 1984. The tram is Currently stored at Newport Workshops.
CW5 682.	19/1/1935		converted to SW5 class in 1984, and was a Transporting Art car painted by Merrin Eirth for the Australian Broadcasting Corporation. The tram is Currently stored at Newport Workshops.
CW5 683.	26/1/1935		stripped for disposal, and sold on 6/7/1990 to a private buyer in Poowong Vic.
CW5 684.	8/2/1935		In storage at Newport Workshops.
CW5 685.	27/2/1935		In storage at Newport Workshops.
8.9 W5 Class Trams 720 to 839.			Preston Workshops built 120 W5 class trams between 1935 and 1939, and converted five CW5 class trams in 1956 to W5 class, simply by swapping over the Brill 22E maximum traction bogies with standard MMTB No.15 bogies. Final numbering was 681 - 685, 720 - 839. The W5 class was the final chapter in the design of Melbourne's three door drop centre tram. Changes made to the design was firstly just directed at the shape of the windscreens, later changes included removing the centre door, relining the ceiling and installing upholstered seating in the drop centre. In 1983, a program was instituted that saw the installation of sliding doors, round cornered windscreens and other improvements designed to prolong the tram's life for another ten years. The conversion program was stopped in 1986 after 83 trams had been converted.
W5 720.	1936		The centre door was filled in in 1973.Currently stored at Newport Workshops.
W5 721.	1936		Transporting Art car painted by Steig Persson for the Herald and Weekly Times. Currently stored at Newport Workshops.
W5 722.	1936		Transporting Art car painted by David Larwill for Associated Communications Enterprises. Currently stored at Newport Workshops.
W5 723.	1936		Theme car. Currently stored at Newport Workshops.
W5 724.	1936		Theme car. Currently stored at Newport Workshops.
W5 725.	1935		Currently stored at Newport Workshops.
W5 726.	1936		Transporting Art car painted by the rock group Mental as Anything for Melbourne FM radio. Currently stored at Newport Workshops.
W5 727.	1936		Theme car painted to promote public transport. the first car to have its centre door removed in 1969.Currently stored at Newport Workshops.

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
W5 728.	1936		converted to SW5, operates from Southbank Depot as part of the City Circle free tourist tram service.
W5 729.	1936		Theme car painted by tram crews. Currently stored at Newport Workshops.
W5 730.	1936		Currently stored at Newport Workshops.
W5 731.	1936		Transporting Art car painted by Lesley Dumbrell for Carlton and United Breweries. Currently stored at Newport Workshops.
W5 732.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 733.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 734.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 735.	1936		Sold to the Gomaco Trolley Co., Ida Grove, Iowa, USA.
W5 736.	1935		Stored at Newport Workshops - converted to SW5 class.
W5 737.	1935		Stored at Newport Workshops - converted to SW5 class.
W5 738.	1935		Transporting Art car painted by Jeffrey Makin for Dulux Australia. Currently stored at Newport Workshops.
W5 739.	1935		On loan to Tramway Museum Society of Victoria, Bylands Vic.
W5 740.	1935		Stored at Newport Workshops - converted to SW5 class.
W5 741.	1935		Stored at Newport Workshops - converted to SW5 class.
W5 742.	1935		Stored at Newport Workshops - converted to SW5 class.
W5 743.	1935		Stored at Newport Workshops - converted to SW5 class.
W5 744.	1935		Stored at Newport Workshops - converted to SW5 class.
W5 745.	1935		Stored at Newport Workshops - converted to SW5 class.
W5 746.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 747.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 748.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 749.	1936		Theme car painted by tram crews complete with a Chinaman on the front. Currently stored at Newport Workshops.
W5 750.	1936		Currently stored at Newport Workshops - converted to SW5 class.
W5 751.	1936		Sold to the Gomaco Trolley Co., Ida Grove, Iowa, USA.
W5 752.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 753.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 754.	1935		Stored at Newport Workshops - converted to SW5.
W5 755.	1936		Stored at Newport Workshops.
W5 756.	1936		Sold to the Gomaco Trolley Co., Ida Grove, USA. Currently located in working order at the Savannah Roundhouse Museum, Savannah Georgia.
W5 757.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 758.	1936		Transporting Art car painted by Michael Johnson for the State Insurance Office. Currently stored at Newport Workshops.
W5 759.	1936		Preserved as part of the PTC Heritage tram fleet.
W5 760.	1936		Transporting Art car painted by Robert Jacks for the Focus Group. Currently stored at Newport Workshops.
W5 761.	1936		Sold complete on 27/1/1989 to a private buyer in Bacchus marsh Vic..
W5 762.	1936		Preserved at the Sydney Tramway Museum.
W5 763.	1936		Stored at Newport Workshops.
W5 764.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 765.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 766.	1936		Preserved at the Perth Electric Tramway Society, Whiteman Park W.A.
W5 767.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 768.	1936		Stored at Newport Workshops.
W5 769.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 770.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 771.	1936		The tram remained in original condition and was sold to the Gomaco Trolley Co., Ida Grove, USA.
W5 772.	1936		Stored at Newport Workshops.
W5 773.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 774.	1936		The tram remained in original condition and is now preserved as part of the PTC Heritage tram fleet.
W5 775.	1936		Stored at Newport Workshops - converted to SW5 class>
W5 776.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 777.	1936.	Sth Melbourne Depot	Stored at Newport Workshops - converted to SW5 class.
W5 778.	1936		Sold complete less motors on 16/10/1990 to private enthusiast at Newtown, Geelong.
W5 779.	1936		Sold to Gomaco Trolley Co., Ida Grove, Iowa USA.
W5 780.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 781.	1936		last to be converted to SW5 in 1985 and is Currently stored at Newport Workshops.
W5 782.	1936		On loan to the Tramway Museum Society of Victoria, Bylands. It is intended to restore it to 1935 condition using windshields from W5 752 and parts from W5 820.
W5 783.	1936		Stored at Newport Workshops.
W5 784.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 785.	1936.	Sth Melbourne Depot	Converted to SW5 class in 1955 using parts already made for the 30 cancelled W7 class trams -Ready Reserve fleet tram Currently stored at Glenhuntly. Depot
W5 786	1937		Stored at Newport Workshops - converted to SW5 class.
W5 787.	1936		Stored at Newport Workshops -involved in a serious collision in 1952 and was converted to SW5 class in 1956 using spare W7 parts but it retained square cornered windscreens.

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
W5 788.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 789.	1936		Stored at Newport Workshops - converted to SW5 class.
W5 790.	1937		Stored at Newport Workshops - converted to SW5 class.
W5 791.	1937		Stored at Newport Workshops - converted to SW5 class.
W5 792.	1937		Preserved at the Sydney Tramway Museum.
W5 793.	1937		Stored at Newport Workshops - converted to SW5 class.
W5 794.	1937		The tram remained in original condition and was sold on 20/10/1989 to Withers Holiday Village Lakes Entrance Vic.
W5 795.	1937		This tram was meant to be the 84th SW5 conversion. Work had started on the tram when the program was stopped. The tram was loaned to Tramway Museum Society of Victoria, Bylands Vic. in 1991
W5 796.	1937		Stored at Essendon Depot on 4 road -converted to a drivers instruction car, training tram and mobile schoolroom in 1992.
W5 797	1938		Stored at Newport Workshops - converted to SW5 class.
W5 798	1937		Body sold on 20/2/1990 to private buyer in Lonsdale Vic.
W5 799.	1937		sold to the Gomaco Trolley Co., Ida Grove, Iowa USA after fire damage in 1988.
W5 800.	1937.		
W5 801.	1937		sold in 1988 and was the first W5 class tram sold.
W5 802.	1938		Transporting Art car painted by Kim Donaldson for the Challenge Bank.
W5 803.	1938		scrapped after a bad collision in 1961.
W5 804.	1939		This tram remained in original condition and was sold on 12/10/1989 to a private buyer in Fawkner Vic..
W5 805.	1939.		
W5 806.	1939		Transporting Art car painted by Elizabeth Gower for Canon Australia.
W5 807.	1939.		
W5 808.	1937		The tram is Currently operating on the Bendigo Tramways Talking Tram tour and has been repainted into Bendigo colours retaining its original number.
W5 809.	1937.		
W5 810.	1937		This was the last tram to be built with square cornered windscreens. converted to SW5 class and is Currently stored at Newport Workshops.
W5 811.	1937.		
W5 812.	1937.		
W5 813.	1937		scrapped after a bad collision in 1963.
W5 814.	1937		Transporting Art car painted by Phillip Faulks for the National Heart Foundation (Hearthealth).
W5 815.	1937.		
W5 816.	1937		Transporting Art car painted by Michael Leunig and sponsored by The Age Newspaper. Michael Leunig is a cartoonist with the newspaper.
W5 817.	1937		This tram remained in original condition and was sold on 3/11/1989 to a private buyer in Templestowe Vic.
W5 818.	1937.		
W5 819.	1937.		
W5 820.	1937		This tram remained in original condition and was wrecked in a collision in 1988. What was left of sold to the Tramway Museum Society of Victoria, Bylands as spare parts for W5 class trams 782 and 795.
W5 821.	1938		This tram only had its centre door closed off .the only W5 class tram to be painted in The Met's colour scheme and was the last W5 in regular service. It has been preserved as part of the Dept. of Infrastructure's heritage tram fleet.
W5 822.	1938		This tram was sold on 6/7/1990 to a private buyer in Lancefield Vic.
W5 823.	1938.		
W5 824.	1938		Transporting Art car
W5 825.	1938		This tram remained in original condition. sold stripped on 6/7/1990 to a private buyer in Queanbeyan, NSW.
W5 826.	1938.		
W5 827.	1938		Body sold on 6/7/1990 to a private buyer in Reservoir Vic.
W5 828.	1938.		Brunswick Depot.
W5 829.	1938		Transporting Art car painted by Lin Onus for the National Heart Foundation (Hearthealth). It is Currently in storage at Newport Workshops and was previously painted as a Transporting Art car painted by Eve Glenn and Megan Evans for the International Year of Peace.
W5 830.	1938.		
W5 831.	1938		It remained in original form and was sold in 1990.
W5 832.	1938		It remained in original form and was sold in 1990.
W5 833.	1938		Became drivers instruction car in 1989.
W5 834.	1938.		
W5 835.	1938		Remained in original form and sold on 20/2/1990 to a private buyer in Lonsdale Vic.
W5 836.	1938.		
W5 837.	1938		Transporting Art car painted by Terry Matassoni for the National Heart Foundation (Hearthealth).
W5 838.	1938.		
W5 839.	1939		This tram remained in original condition and was sold in 1990 to the Gomaco Trolley Co. in Ida Grove, Iowa USA.
8.10 SW5 Class 840 to 849.			This was the first class of tram to be fitted with sliding doors. They were originally intended to be W5 class but were used as test trams for features such as sliding doors and Peters door motors which were to be fitted to SW6 850 onwards.

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
SW5 840.	1939.		
SW5 841.	1939		This tram is part of the Ready Reserve tram fleet and is Currently stored inside the old Plate Shop at Preston Workshops.
SW5 842.	1939	Currently Southbank Depot	part of Yarra Trams City Circle tourist tram fleet.
SW5 843.	1939		Ready Reserve tram stored at Preston Workshops.
SW5 844.	1939.		
SW5 845.	1939	Currently Southbank Depot	Yarra Trams.
SW5 846.	1939	Currently Malvern Depot	Swanston Trams.
SW5 847.	1939.		
SW5 848.	1939.		
SW5 849.	1940.		
8.11 SW6 Class 850 to 969.			
SW6 850.	1939		fitted with full drop windows as were the SW5 class. All subsequent trams were fitted with half drop windows.
SW6 851.	1940.		
SW6 852.	1940.		
SW6 853.	1940.		
SW6 854.	1940.		
SW6 855.	1940	Currently Southbank Depot	Yarra Trams.
SW6 856.	1940.		
SW6 857.	1940	Currently Southbank Depot	part of Yarra Trams' City Circle tourist tram fleet.
SW6 858.	1940.		
SW6 859.	1940.		
SW6 860.	1940.		
SW6 861.	1940.		
SW6 862.	1940.		
SW6 863.	1940.		
SW6 864.	1940.		
SW6 865.	1940.		
SW6 866.	1941.		
SW6 867.	1941		Currently stored at Newport Workshops.
SW6 868.	1941		Currently stored at Newport Workshops.
SW6 869	1941	Currently Malvern Depot	Swanston Trams.
SW6 870.	1941	Currently Southbank Depot	This tram featured at the 70th Anniversary of Sth Melbourne Depot. It ran free trips between the depot and Dudley St sidings via William St showing STH MELB DEPOT - 70. Yarra Trams.
SW6 871.	1941		Currently stored at Newport Workshops.
SW6 872.	1941		Currently stored at Newport Workshops.
SW6 873.	1941		Currently stored at Newport Workshops.
SW6 874.	1941		Currently stored at Newport Workshops.
SW6 875.	1941.		
SW6 876.	1941		This tram was placed in storage at Newport Workshops after its final duties as the Botanica '95 Tramgarden, which involved it being partially covered with imitation grass, with real grass in window boxes and seats removed to fit large potted plants inside. Four strange looking model dogs were also attached to the tram, one on each corner. A trip in it on the City Circle was akin to travelling in a jungle!
SW6 877.	1942		Currently in storage at Newport Workshops.
SW6 878.	1942		Currently in storage at Newport Workshops.
SW6 879.	1942		Currently in storage at Newport Workshops.
SW6 880.	1942		Part of the Ready Reserve fleet stored at Preston Workshops in the Plate Shop.
SW6 881.	1943	Currently Malvern depot	Swanston trams.
SW6 882.	1943		Currently in storage at Newport Workshops.
SW6 883.	1943.		
SW6 884.	1943.		
SW6 885.	1943		Currently in storage at Newport Workshops.
SW6 886.	1943		Currently in storage at Newport Workshops.

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
SW6 887.	1943		On loan to the Tramway Museum Society of Victoria, Bylands.
SW6 888.	1943	Currently Southbank Depot	part of Yarra Trams City Circle tourist tram.
SW6 889.	1943		Currently in storage at Newport Workshops.
SW6 890.	1944		Currently in storage at Preston Workshops After service as the RC2 controller training tram.
SW6 891.	1944		Ready Reserve fleet tram Currently stored at Preston Workshops.
SW6 892.	1944	Currently Malvern Depot	Swanston Trams.
SW6 893.	1944.		
SW6 894.	1944	Currently stored at Newport Workshops.	
SW6 895.	1944.		
SW6 896.	1945	Currently Southbank Depot	Yarra Trams.
SW6 897.	1945		Reserve fleet tram Currently stored at Preston Workshops.
SW6 898.	1945		Currently stored at Newport Workshops.
SW6 899.	1945		Reserve fleet tram Currently stored at Preston Workshops.
SW6 900.	1945		preserved as part of the PTC Heritage Tram fleet.
SW6 901.	1945		Currently in storage at Newport Workshops.
SW6 902.	1945		Currently on loan to the Tramway Museum Society of Victoria, Bylands and retains its original bus type seating.
SW6 903.	1945		Currently stored at Newport Workshops.
SW6 904.	1945		Currently stored at Newport Workshops.
SW6 905.	1945		Currently stored at Newport Workshops.
SW6 906.	1945		Ready Reserve fleet tram Currently stored at Preston Workshops.
SW6 907.	1945		Currently stored at Newport Workshops.
SW6 908.	1945		Currently stored at Newport Workshops.
SW6 909.	1945	Southbank Depot	part of Yarra Trams' City Circle tourist tram fleet.
SW6 910.	1946		Currently stored at Newport Workshops.
SW6 911.	1946		Currently stored at Newport Workshops.
SW6 912.	1946		Currently stored at Newport Workshops.
SW6 913.	1946		Currently stored at Newport Workshops.
SW6 914.	1946		Currently stored at Newport Workshops.
SW6 915.	1946		Currently stored at Newport Workshops.
SW6 916.	1946		Currently stored at Newport Workshops.
SW6 917.	1946		Currently stored at Newport Workshops.
SW6 918.	1946		Currently stored at Newport Workshops.
SW6 919.	1946		Currently stored at Newport Workshops.
SW6 920.	1946		illuminated all-over advertising car promoting Quick Eze before withdrawal. It is Currently stored at Newport Workshops.
SW6 921.	1946		Currently stored at Newport Workshops.
SW6 922.	1946		Currently stored at Newport Workshops.
SW6 923.	1946		Currently stored at Newport Workshops.
SW6 924.	1946		Currently stored at Newport Workshops.
SW6 925.	1946	Currently Southbank Depot	part of Yarra Trams' City Circle Tourist Tram fleet.
SW6 926.	1947		Currently stored at Newport Workshops.
SW6 927.	1947		first to travel along the new City Circle tracks in Spring St. It is Currently stored at Newport Workshops.
SW6 928.	1947		tram used as a test tram for installation of Metcard equipment. It is Currently operating from Malvern Depot for Swanston Trams.
SW6 929.	1947	Currently Malvern Depot	Swanston Trams.
SW6 930.	1947.	Sth Melbourne Depot	Ready Reserve tram Currently stored at Preston Workshops.
SW6 931.	1947.	Sth Melbourne Depot	Currently stored at Newport Workshops.
SW6 932.	1947	Currently Southbank Depot	Yarra Trams.
SW6 933.	1947		Currently stored at Newport Workshops.
SW6 934.	1947		Currently stored at Newport Workshops.
SW6 935.	1947	Currently Malvern Depot	Swanston Trams.
SW6 936.	1947		Ready Reserve tram Currently stored at Preston Workshops.
SW6 937.	1948	Currently Southbank Depot	Restaurant 02 for the Colonial Tramcar Restaurant.
SW6 938.	1948	Currently Malvern Depot	Swanston Trams.

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
SW6 939.	1948	Currently Southbank Depot	Restaurant 03 for the Colonial Tramcar Restaurant.
SW6 940.	1949		Currently stored at Newport Workshops.
SW6 941.	1949.	Malvern Depot	Ready Reserve tram Currently stored at Preston Workshops.
SW6 942.	1949		Currently stored at Newport Workshops.
SW6 943.	1949		Currently stored at Newport Workshops.
SW6 944.	1949		Currently stored at Newport Workshops.
SW6 945.	1949		Currently stored at Newport Workshops.
SW6 946.	1949		Currently operating from Southbank depot for Yarra Trams.
SW6 947.	1949.	Sth Melbourne Depot	After use as a theme car promoting MetMan, a children's safety campaign, placed in the Ready Reserve fleet and stored at Preston Workshops.
SW6 948.	1949		Currently stored at Newport Workshops.
SW6 949.	1949.		
SW6 950.	1950		Currently stored at Newport Workshops.
SW6 951.	1950.		
SW6 952.	1950		Currently stored at Newport Workshops.
SW6 953.	1950		Currently stored at Newport Workshops.
SW6 954.	1950.		
SW6 955.	1950		Currently in storage at Newport Workshops.
SW6 956.	1950		Ready Reserve tram Currently stored at Preston Workshops.
SW6 957.	1950		Currently in service from Southbank Depot as part of Yarra Trams' City Circle tourist tram fleet.
SW6 958.	1950		Currently stored at Newport Workshops.
SW6 959.	1950		Currently stored at Newport Workshops.
SW6 960.	1950		Currently stored at Newport Workshops.
SW6 961.	1950	Currently Malvern Depot	Swanston Trams.
SW6 962.	1950		Ready Reserve tram Currently stored at Preston Workshops.
SW6 963.	1950.		
SW6 964.	1950.		
SW6 965.	1950.	Malvern Depot	After service as an illuminated all-over advertising car promoting Australian Air Express, converted back to a standard SW6 and placed in the Ready Reserve fleet. It is Currently stored at Preston Workshops.
SW6 966.	1950		Currently stored at Newport Workshops.
SW6 967.	1951		Currently stored at Newport Workshops.
SW6 968.	1951		Currently at the Essendon Children's Driving School, cnr. Lawson and Albion Sts Essendon, replacing W2 457 which has been moved to the Tramway Museum Society of Victoria, Bylands Vic.
SW6 969.	1951.		
8.12 W6 class trams 970 to 979, 981 to 1000 - 30 trams.			
W6 970.	1951		Currently stored at Newport Workshops.
W6 971.	1951	Currently Malvern Depot	Swanston Trams.
W6 972.	1951.	Brunswick Depot	Currently stored at Newport Workshops.
W6 973.	1951		Currently stored at Newport Workshops.
W6 974.	1952		Currently stored at Newport Workshops.
W6 975.	1952		Currently stored at Newport Workshops.
W6 976.	1952		After service as an illuminated all over advertising car promoting Express Post, withdrawn from regular service in May 1996 and donated to the Bendigo Trust in July 1996 by the then Transport Minister Alan Brown. The Trust has since converted the tram to a cafe car.
W6 977.	1952		Currently stored at Newport Workshops.
W6 978.	1955		Currently stored at Newport Workshops.
W6 979.	1955		Currently stored at Newport Workshops.
PCC 980	1950		PCC 980 was a hybrid car with a locally produced body mounted on St Louis B3 trucks powered by General Electric controls. from 1950 to 1971 and was donated on unpowered trucks to the Tramway Museum Society of Victoria at Bylands near Kilmore in 1982.
W6 981.	1955	Currently Malvern depot	Swanston Trams.
W6 982.	1955	Currently Southbank Depot	Yarra Trams.
W6 983.	1955		This tram is Currently operating from Southbank Depot for Yarra Trams and was the first W class tram to be repainted for its new private owners. It is still painted in 1930's green and cream as per the contracts, but has its number in the middle of the tram and no ownership is displayed.
W6 984.	1955.	Brunswick depot	Currently stored at Newport Workshops.
W6 985.	1955		Currently stored at Newport Workshops.

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
W6 986.	1955.	Glenhuntly Depot	Currently stored at Newport Workshops.
W6 987.	1955		Currently stored at Newport Workshops.
W6 988.	1955		Currently stored at Newport Workshops.
W6 989.	1955		Currently stored at Newport Workshops.
W6 990.	1955		After service as an illuminated all-over advertising tram promoting NRMA Insurance the tram is Currently stored at Newport Workshops.
W6 991.	1955		Currently stored at Newport Workshops.
W6 992.	1955.		
W6 993.	1955		Currently stored at Newport Workshops.
W6 994.	1955		Currently stored at Newport Workshops.
W6 995.	1955.	Sth Melbourne Depot	After service as an illuminated all-over advertising tram promoting Southern Cross press the tram is Currently stored at Newport Workshops.
W6 996.	1955		Currently stored at Newport Workshops.
W6 997.	1955		Currently stored at Newport Workshops.
W6 998.	1955		Currently stored at Newport Workshops.
W6 999.	1955		Currently stored at Newport Workshops.
W6 1000.	1955	Currently Southbank Depot	part of Yarra Trams' City Circle tourist tram fleet and has been named The City Of Vienna.
8.13 W7 Class 1001 to 1040			
W7 1001.	1955		Currently on loan to the Tramway Museum Society of Victoria, Bylands Vic.
W7 1002.	1955.	Malvern Depot	After service as an illuminated all-over advertising tram promoting the Blood Bank, it is Currently stored at Newport Workshops.
W7 1003.	1955.	Preston Depot	Currently stored at Newport Workshops.
W7 1004.	1955.	Preston Depot	Currently stored at Newport Workshops.
W7 1005.	1955	Currently Southbank Depot	Yarra Trams.
W7 1006.	1955.	Preston Depot	Currently stored at Newport Workshops.
W7 1007.	1955.	Preston Depot	Currently stored at Newport Workshops.
W7 1008.	1955.	Sth Melbourne Depot	Ready Reserve tram Currently stored at Preston Workshops.
W7 1009.	1955		Currently stored at Newport Workshops.
W7 1010.	1955	Currently Malvern Depot	Swanston Trams.
W7 1011.	1955.		After service as an illuminated all-over advertising tram promoting St George Bank, withdrawn from regular service, having its illuminations removed and being kept aside for special advertising promotions on the City Circle. It has had its ends painted in the City Circle livery and is part of that fleet but has not been converted to One Person Operation necessitating a host being on the tram. It is still available for special promotions.
W7 1012.	1955.	Sth Melbourne Depot	Currently stored at Newport Workshops.
W7 1013.	1955		Ready Reserve tram Currently stored at Preston Workshops.
W7 1014.	1955		After service as an illuminated all-over advertising tram promoting AGC Insurance, it is Currently stored at Newport Workshops.
W7 1015.	1955	Currently Malvern Depot	Swanston Trams.
W7 1016.	1955.	Preston depot	Currently stored at Newport Workshops.
W7 1017.	1955.	Preston Depot	Currently stored at Newport Workshops.
W7 1018.	1956.	Sth Melbourne Depot	After service as an illuminated all-over advertising tram promoting Workcover Insurance, it is Currently stored at Newport Workshops.
W7 1019.	1956		Currently stored at Newport Workshops.
W7 1020.	1956		Currently operating from Southbank Depot as part of Yarra Trams' City Circle tourist tram fleet.
W7 1021.	1956	Currently operating from Malvern Depot for Swanston Trams.	
W7 1022.	1956.		
W7 1023.	1956.	Preston Depot	Ready Reserve tram Currently stored at Preston Workshops.
W7 1024.	1956.	Sth Melbourne Depot	After service as an illuminated all-over advertising car promoting Australian Pensioner's Insurance Agency< it is Currently stored at Newport Workshops.
W7 1025.	1956		Currently stored at Newport Workshops.
W7 1026.	1956.	Preston Depot	Currently stored at Newport Workshops.
W7 1027.	1956	Currently Malvern Depot	Swanston Trams.
W7 1028.	1956.	Preston Depot	stored at Newport Workshops after it ran into the side of A2 286 at the corner of Victoria Pde and Nicholson St in 1996. 1028 took the City Circle points accidentally at a great rate of knots and nearly wiped 286 out of the fleet.
W7 1029.	1956.	Preston Depot	Currently stored at Newport Workshops.
W7 1030.	1956.	Preston Depot	Currently stored at Newport Workshops.
W7 1031.	1956	Currently Malvern Depot	Swanston Trams.

Designation	Construction and operation details	Last allocated depot	Out of service and subsequent history.
W7 1032.	1956.		
W7 1033.	1956.		
W7 1034.	1956.		
W7 1035.	1956.		
W7 1036.	1956	Malvern Depot	After its last duties from Malvern Depot promoting Calcutta Tramways, placed in the Ready Reserve fleet and is Currently stored at Preston Workshops.
W7 1037.	1956.		
W7 1038.	1956.	Preston Depot	Currently stored at Newport Workshops.
W7 1039.	1956	Currently Southbank Depot	Yarra Trams.
W7 1040.	1956.	Sth Melbourne Depot	withdrawn from service in 1996 and placed in the Heritage Fleet.

Note this website http://www.reocities.com/z_class/wclass8.html reports that Last updated 10th December 2000.