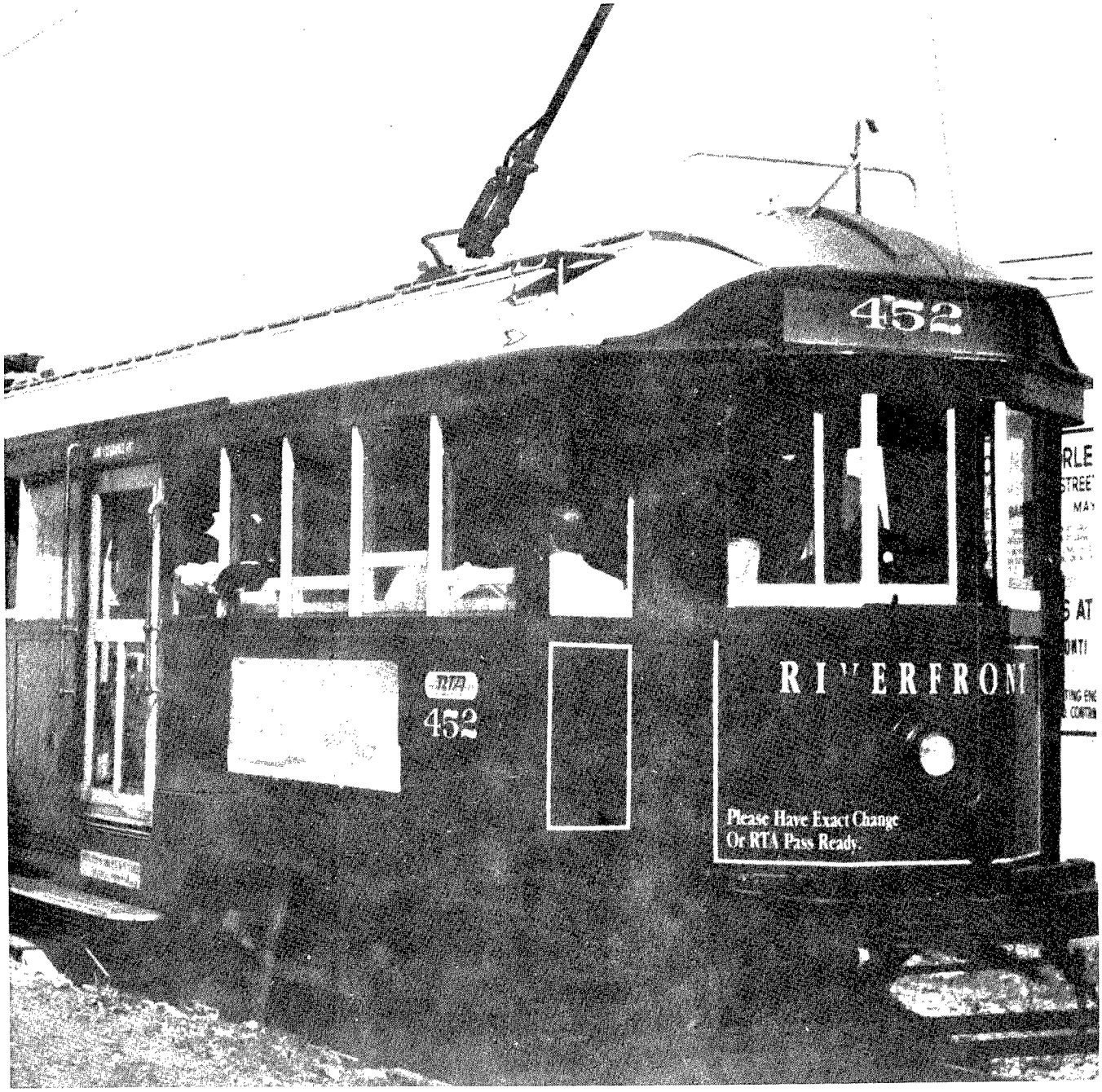
U.S. Department
of Transportation

Construction Costs and Operating Characteristics of Vintage Trolleys

March 1992



Construction Costs and Operating Characteristics of Vintage Trolleys

Final Report
March 1992

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Prepared for

Federal Transit Administration
U.S. Department of Transportation
Washington, D.C. 20590

Distributed in Cooperation with

Technology Sharing Program
U.S. Department of Transportation
Washington, D.C. 20590

DOT-T-92-20

Introduction

Study Objective and Scope

In recent years, the U.S. Department of Transportation, Federal Transit Administration (FTA), has received an increasing number of requests to fund the start-up and operation of vintage trolley services. FTA implemented this study to research the institutional arrangements, service characteristics and costs associated with vintage trolley systems currently being operated in order to provide a base of information with which to make informed funding decisions for future projects. FTA also requested that comparable information be obtained for several downtown bus circulator systems which might be an alternative to the implementation of vintage trolley services.

Background

In 1917, there were 44,800 miles of electric railway trackage in the United States. The combination of growing automobile usage and improved roads led to the demise of electric railway transportation from the 1920s through 1950s.

Today, the United States is witnessing a growing renaissance of vintage trolley systems. Vintage trolleys have been successfully integrated into the public transportation systems in several cities. Businessmen in many areas have pursued vintage trolley service as a means to stimulate local business in redeveloped or historic areas. Vintage trolley services can contribute to the success of the local tourist and convention business. If operated on a regular schedule in a downtown area, the trolley service can also attract local riders.

Methodology

KPMG Peat Marwick researched the following vintage trolley systems currently in operation:

- McKinney Avenue Line in Dallas, Texas
- Platte River Trolley in Denver, Colorado
- Detroit Citizens' Railway in Detroit, Michigan
- Fort Collins Municipal Railway Society's line in Fort Collins, Colorado
- Trolley in Galveston, Texas
- St. Charles and Riverfront Streetcar Lines in New Orleans, Louisiana

- Vintage Trolley in Portland, Oregon
- Transit Mall Loop in San Jose, California
- Waterfront line in Seattle, Washington

In addition, KPMG Peat Marwick collected information on two vintage trolley systems currently under construction:

- Old Pueblo Trolley in Tucson, Arizona
- Vintage trolley in Memphis, Tennessee

KPMG Peat Marwick obtained information through direct contact with the trolley systems. We also reviewed recent issues of several trolley journals, such as the *New Electric Railway Journal*, *Traction Yearbook*, and *Modern Tramway and Light Rail Transit*.

As noted above, we also collected information from several downtown bus circulator systems for comparison to the vintage trolley operations. These included:

- the "16th Street Mall" in Denver, Colorado
- "Hop a Bus" in Dallas, Texas
- "Texas Specials" in Houston, Texas
- "Hustle Bus/Trolley 2" in Memphis, Tennessee

Findings

Appendix A contains a detailed description of each vintage trolley system, including ownership and operation of the system, background information on the development of the service, route and equipment operated, service characteristics, capital projects, operating and maintenance costs, revenues, future plans for the trolley service, and a contact person. Exhibits 1, 2 and 3 present a summary of key information for each vintage trolley operation.

What is a "vintage" trolley system?

"Vintage" trolley operations come in a variety of forms, ranging from restored older, antique trolleys operating over existing freight or reclaimed streetcar track to trolley replicas running over newly constructed track. The St. Charles Streetcar Line in New Orleans is the oldest, continuously operated streetcar line in the United States. It continues to maintain and operate vintage trolleys, manufactured in 1923 and 1924, over streetcar tracks originally laid in 1835 and electrified in 1893.

Some trolley operations have acquired and restored vintage trolley cars, in some cases abandoned for years. These include the McKinney Avenue Line in Dallas, the Detroit Citizens' Railway, Fort Collins Municipal Railway, the New Orleans Riverfront Streetcar Line, the San Jose Transit Mall vintage trolley, and the Seattle Waterfront Streetcar. The supply of vintage car bodies suitable for restoration, as well as the parts required, is limited. Europe is a current source of relatively complete vintage trolley cars. Many of the vintage trolleys being operated in the United States today have come from Melbourne, Australia.

Vintage trolley systems in Denver, Galveston and Portland operate replicas of vintage turn-of-the century trolleys manufactured by Miner Railcar Services, Inc. of New Castle, Pennsylvania or Gomaco Trolley Company of Ida Grove, Iowa. The replica cars are diesel-electric. Some trolley systems have chosen to continue using the diesel mode, placing electrification on hold. All components of the Miner cars are new. Gomaco builds new bodies for use with older running gear. The Gomaco cars in Portland are historically accurate replicas of streetcars operated in Portland in 1912.

The route for a vintage trolley operation is generally determined by the abandoned rail trackage and/or the attractions the trolley is expected to augment and serve. Several vintage trolley systems are operating on portions of abandoned street railway or freight tracks, including the vintage trolley operations in Dallas, Denver, Fort Collins, New Orleans and Seattle. Vintage trolley systems in Detroit and Galveston have constructed new track to serve key downtown areas. The vintage trolley systems in San Jose and Portland operate over short downtown segments of the newly constructed light rail lines.

EXHIBIT 1
VINTAGE TROLLEY OPERATIONS – SUMMARY OF KEY INFORMATION

Trolley Line	Institutional Arrangement	Service Initiation	Trolley Cars		Track	
			New Reproduction	Vintage Refurbished	New	Old
McKinney Avenue Line Dallas, Texas	owned and operated by non-profit organization, McKinney Avenue Transit Authority (MATA), under operating franchise with the City	7/22/89		1906 Brill 1920 Brill 1913 St. Louis Car Co. 1925 Melbourne Metropolitan Tramways Board		2.4 miles, primarily reclaimed streetcar trackage
Platte Valley Trolley Denver, Colorado	owned and operated by non-profit organization, Denver Rail Heritage Society, formed 7/88	7/1/89	1 Gomaco diesel-electric			1.5 mile Burlington Northern freight 2.0 miles old Interurban
Detroit Citizens' Railway Detroit, Michigan	owned and operated by City of Detroit, Dept. of Transportation (operator of local public bus system)	1976		4 – 1899 St. Louis 2 – 1925 Lisbon 1 – 1901 Philadelphia 1 – 1904 Great Britain 1 – 1895 Berlin	1 mile single line with bypass in middle	
Fort Collins, Colorado	owned and operated by non-profit organization, Fort Collins Municipal Railway Society	12/84		1919 single truck Birney Safety car		1.5 miles old Denver and Interurban track
The Strand Trolley Galveston, Texas	operated by the Park Board of Trustees of Galveston under contract to the City	1987	4 diesel-electric vehicles manufactured by Miner Railcar Services, Inc.		4.7 miles	

EXHIBIT 1
VINTAGE TROLLEY OPERATIONS – SUMMARY OF KEY INFORMATION (cont.)

Trolley Line	Institutional Arrangement	Service Initiation	Trolley Cars		Track	
			New Reproduction	Vintage Refurbished	New	Old
St. Charles Streetcar Line New Orleans, Louisiana	owned and operated by public transit agency, Regional Transit Authority	1835		35 Perley Thomas standard streetcars built in 1923 – 1924		13.2 miles original streetcar tracks constructed 1835 (rebuilt 5/90)
Riverfront Streetcar Line New Orleans, Louisiana	owned and operated by public transit agency, Regional Transit Authority	8/14/88		3 1923 Perley Thomas 3 ex Melbourne 1 Naragansett, circa 1910 1 1917 Brill		1.9 miles New Orleans Public Belt Railroad tracks severed from mainline
Vintage Trolley Portland, Oregon	owned and operated by Tri–Met (local public transit operator) under contractual arrangement with Vintage Trolley, Inc., a private non–profit organization	12/91	4 vintage replicas manufactured by Gomaco		1.5 mile downtown segment of Banfield LRT line	
San Jose Transit Mall San Jose, California	trolleys owned by San Jose Trolley Corporation and operated by Santa Clara County Transit District	11/18/88		1903 Sacramento Electric, Gas & Railway Co. 1913 Jewett Car Co. 1912 American Car Co. 1913 American Car Co. 1928 Melbourne Metropolitan Tramways Board 1929 Milan, Italy	4.5 miles downtown Guadalupe corridor LRT tracks	

EXHIBIT 1
VINTAGE TROLLEY OPERATIONS – SUMMARY OF KEY INFORMATION (cont.)

Trolley Line	Institutional Arrangement	Service Initiation	Trolley Cars		Track	
			New Reproduction	Vintage Refurbished	New	Old
Waterfront Streetcar Seattle, Washington	owned and operated by local public transit agency, Seattle Metro	5/29/82		5 Melbourne Metropolitan Tramways Board (circa 1927)	.4 miles	1.6 miles old Burlington Northern switching single track
Tucson, AZ *under construction*	owned by volunteer non-profit organization, Old Pueblo Trolley, Inc. will operate through franchise agreement with City	spring/ summer 1992		1919 Birney Safety Car	.5 miles	.5 miles reclaimed streetcar trackage
Memphis, TN *under construction*	owned and will be operrated by local public transit agency, Memphis Area Transit Authority	November 1992		2 Melbourne 6 single truck Brill cars, previously operated in Portugal 6 double truck Brill cars, previously operated in Portugal	2.5 miles double track (5 mi total)	

EXHIBIT 2
VINTAGE TROLLEY OPERATIONS – SUMMARY OF KEY INFORMATION

Trolley Line	Serves Central City	Hours/Days of Operation	Fare	Headways	Annual Operating Statistics			Average Speed
					Vehicle Miles	Vehicle Hours	Passengers	
McKinney Avenue Line Dallas, Texas	no	365 days/year 10am–10pm Sun – Thurs 10am–12am Fri – Sat	One–way $.75 adult $.50 children $.25 seniors disabled	15 minutes – 11–2 weekdays, Friday evening, weekends 30 minutes – other times	45,991	4,576	236,074	10.1
Platte Valley Trolley Denver, Colorado	no	April – October daily 11am–5pm	$2 $1 seniors/ children	n/a			43,500 3,900 excursion	
Detroit Citizens' Railway Detroit, Michigan	yes	365 days/year 7am–6:30pm M–F 10am–6pm S–S till 11 during ethnic festival season	$.45 seniors free	15 minutes			109,500	
Fort Collins, Colorado	no	May – Sept weekends/ holidays 12 noon – 5pm	$1.00 adults $.50 children $.75 seniors	30 minutes			10,000	
The Strand Trolley Galveston, Texas	yes	365 days/year 10am–9pm March – Aug 10am–6pm Sept – Feb	$1.00 one–way $.50 seniors/ children	winter 1 hour summer 1/2 hour	21,275	4,750	120,465	4.5

EXHIBIT 2
VINTAGE TROLLEY OPERATIONS – SUMMARY OF KEY INFORMATION (cont.)

Trolley Line	Serves Central City	Hours/Days of Operation	Fare	Headways	Annual Operating Statistics			Average Speed
					Vehicle Miles	Vehicle Hours	Passengers	
St. Charles Streetcar Line New Orleans, Louisiana	yes	365 days/year 24 hours/day	$.80 one way $.10 transfer	3.5 minutes – am & pm peaks 5 minutes – midday 12 minutes – night	549,118	90,366	7,300,000	6.1
Riverfront Streetcar Line New Orleans, Louisiana	yes	365 days/year 6am–12pm M–F 8am–12pm S–S	$1.00 one way $.40 E&H $.10 transfer	15 minutes – day 30 minutes – night	128,805	21,197	1,642,500	6.1
Vintage Trolley Portland, Oregon	yes	weekends/ holidays 10am–6pm	$1.00	15 minutes	n/a	n/a	n/a	
San Jose Transit Mall San Jose, California	yes	365 days/year 9am–3:30pm M–F 11am–6pm S–S/ holidays	$.50 $.25 disabled	20 minutes	22,400	4,480	143,322	5.0

EXHIBIT 2
VINTAGE TROLLEY OPERATIONS – SUMMARY OF KEY INFORMATION (cont.)

Trolley Line	Serves Central City	Hours/Days of Operation	Fare	Headways	Annual Operating Statistics			Average Speed
					Vehicle Miles	Vehicle Hours	Passengers	
Waterfront Streetcar Seattle, Washington	yes	365 days/year 7am–6:30pm M–F 8:30am–11pm S–S/holidays	$1.00 peak $.75 non–peak	20–30 minutes – weekdays 30 minutes – weekends and holidays	30,800	6,400	198,300	4.8
Tucson, AZ *under construction*	no	will operate weekends, Friday evening, and weekdays at noon		n/a	n/a	n/a	n/a	
Memphis, TN *under construction*	yes	will operate 6am–12am M–F start later on weekends 3–5 minute headways peak 10 minute non–peak	anticipate $.50	3–5 minutes – am & pm peaks, noon hour 10 minutes other times	n/a	n/a	n/a	

EXHIBIT 3
VINTAGE TROLLEY OPERATIONS – SUMMARY OF KEY INFORMATION

Trolley Line	Annual O & M Costs	Annual Revenues	Labor	Capital Costs
McKinney Avenue Line Dallas, Texas	$389,000	46% farebox recovery	60% volunteer 6 employees	$5.5 M
Platte Valley Trolley Denver, Colorado		$63,000 fares $8,500 excursion fares	volunteer	$350,000 reproduction trolley
Detroit Citizens' Railway Detroit, Michigan	$500,000		DOT employees	$2.72 M
Fort Collins, Colorado		$9,000 fares (including charter)	volunteers	
The Strand Trolley Galveston, Texas	$325,000	$148,587 fares $88,000 FTA $29,000 Board $29,000 each of 2 private funding partners	Board employees	$7.5 M construction $500,000 per car

EXHIBIT 3
VINTAGE TROLLEY OPERATIONS – SUMMARY OF KEY INFORMATION (cont.)

Trolley Line	Annual O & M Costs	Annual Revenues	Labor	Capital Costs
St. Charles Streetcar Line New Orleans, Louisiana	$3,400,000 *	46% farebox recovery 1% regional sales tax	RTA	$47 M refurbishment of track, maintenance facility and streetcars (began 1988)
Riverfront Streetcar Line New Orleans, Louisiana	$3,400,000 *	46% farebox recovery 1% regional sales tax	RTA	$3.9 M initial construction $14.4 M Phases II and III
Vintage Trolley Portland, Oregon	$265,000	Local Improvement District (self–imposed taxes on properties adjacent to trolley operations)	Tri–Met operators; VTI conductors (mostly volunteer)	$1 M carbarn $1.9 M trolleys (4)
San Jose Transit Mall San Jose, California	$641,500		volunteers restored trolleys; District operates and maintains	

* Operating and maintenance cost for both St. Charles Streetcar and Riverfront Streetcar lines

EXHIBIT 3
VINTAGE TROLLEY OPERATIONS – SUMMARY OF KEY INFORMATION (cont.)

Trolley Line	Annual O & M Costs	Annual Revenues	Labor	Capital Costs
Waterfront Streetcar Seattle, Washington	$579,600		Seattle Metro employees	$4.2 M initial construction $6 M .4 mile extension in 1990
Tucson, AZ *under construction*	n/a	n/a	volunteer	
Memphis, TN *under construction*	n/a	n/a	MATA employees	$33 M average $300,00 per car restoration

All of the vintage trolley services are operated over relatively short track segments (less than 5 miles) with the exception of the St. Charles Streetcar Line, which travels over a 13 mile one-way route.

Vintage trolley operations serve both a public transit function and as a tourist attraction. Systems that serve central business districts can attract a significant number of local riders. The St. Charles and Riverfront Streetcar lines in New Orleans play an essential role in the New Orleans public transit network. The St. Charles line is a registered historic landmark and both lines serve as major tourist attractions in themselves. The Riverfront Streetcar Line links the Vieux Carre and the newly developed 19th century warehouse district (major tourist areas) with the Canal Street busline, the RTA's most heavily utilized transit route.

The Seattle Waterfront Line was extended in 1990 from the waterfront to the Metro bus tunnel, making the trolleys a vital link in the City's transportation network.

The Portland and San Jose vintage trolley operations over the downtown segments of the new light rail lines, supplement the LRT service in the downtown area during weekdays, thus serving an important transit function and as a downtown attraction.

The Detroit Citizens' Railway links hotels with the Cobo Hall convention center and the Renaissance Center, thus serving the convention and tourist business. The trolley is an important means of access to the City's numerous ethnic festivals at Hart Plaza, which attract 5 million visitors annually, since parking in the area is limited.

The McKinney Avenue Line in Dallas and the line along the Strand in Galveston, though not operated as part of the local public transit system, provide public transit service in key downtown historical/business areas.

The volunteer, non-profit trolley systems in Denver and Fort Collins serve more as tourist attractions than in a public transit role, since they border, but do not directly serve, the downtown areas at this time.

What are the institutional arrangements of vintage trolley systems?

The vintage trolley services researched are owned and operated under a variety of institutional arrangements. The St. Charles and Riverfront Streetcar Lines in New Orleans, the Detroit Citizens' Railway in Detroit, the Waterfront Streetcar in Seattle, and the Portland trolley are examples of vintage trolley services owned and operated by the local public transit system. The McKinney Avenue Line in Dallas is owned and operated by a non-profit organization under an operating franchise with the City. Several trolley operations, such as those in Fort Collins and Denver, Colorado, are owned by non-profit organizations and have been developed and operated entirely by volunteers. The Santa Clara County Transit District operates vintage trolleys over the Transit Mall Loop in San Jose which are owned by a non-profit organization.

When are the trolleys operated?

Most of the vintage trolley systems operate 7 days a week throughout the year. The St. Charles Streetcar Line operates 24 hours a day. Tri-Met in Portland operates the vintage trolleys over a downtown segment of its light rail tracks on weekends and holidays only, as a supplement to regular LRT service; during the week, only LRT vehicles are used.

The Denver Rail Heritage Society, a non-profit organization, operates vintage trolley service daily from April through October. The Fort Collins Municipal Railway Society, also an all volunteer non-profit organization, operates vintage trolleys only on weekends and holidays from May through September.

How much service is provided and how many passengers are carried?

Exhibit 4 presents the vehicle miles operated, the number of passengers carried and the average vehicle load factor for the trolley systems which were able to provide this information. The year round trolley services operated by public transit agencies provide the most service and carry the most passengers. The St. Charles Streetcar line carries over 20,000 passengers per day with an average load factor of 13.3 passengers per vehicle revenue mile. The Riverfront Streetcar Line currently carries between 4,000 and 5,000 passengers per day with an average load factor of about 12 passengers per vehicle revenue mile. Both the St. Charles and Riverfront Streetcar lines are integral parts of the public transit system in New Orleans and serve as key commuter routes as well as tourist attractions.

The other trolley operations average 5 to 7 passengers per vehicle mile. The Detroit Citizens' Railway operates 90 vehicle miles and carries approximately 300 passengers per day, with a vehicle load factor of 3.33. Service in Detroit has been sporadic in recent years due to construction and deferred maintenance of track and equipment.

How much do the vintage trolley systems cost to operate?

Exhibit 5 presents the operating and maintenance costs of the trolley systems, and provides key measures of cost effectiveness, including cost per vehicle mile, cost per route mile and cost per passenger.

Annual operating and maintenance costs for the trolley systems operated by public transit agencies, with the exception of New Orleans, range from $265,000 to $641,500. The annual operating and maintenance costs for the two streetcar lines in New Orleans is $3.4 million. As noted above, the St. Charles Streetcar line is considerably longer than the other vintage trolley lines and operates 24 hours a day, which contribute to the higher operating costs. However, the cost per vehicle mile and cost per vehicle hour for the New Orleans streetcars are considerably less than for the other vintage trolley systems.

EXHIBIT 4
SERVICE UTILIZATION

Trolley Line	Passengers	Vehicle Miles	Passengers/ Vehicle Mile
Dallas, TX	236,074	45,991	5.13
Denver, CO	47,400		
Detroit, MI	109,500		
Fort Collins, CO	10,000		
Galveston, TX	120,465	21,275	5.66
New Orleans, LA			
St. Charles	7,300,000	549,118	13.29
Riverfront	1,642,500	128,805	12.75
San Jose, CA	143,322	22,400	6.40
Seattle, WA	198,300	30,800	6.44

Notes:

Data for the Denver Rail Heritage Society and the Fort Collins Municipal Railway were not available. Both trolley services are operated by non-profit organizations.

Statistics for the vintage trolley service operated by Tri-Met over the LRT tracks are not yet available, as the service was initiated in December, 1991.

EXHIBIT 5
COST EFFECTIVENESS

Trolley Line	Annual Vehicle Miles	Annual Vehicle Hours	Track Miles	Annual Passengers	Annual Operating & Maintenance Costs	O&M Cost/ Vehicle Mile	O&M Cost/ Vehicle Hour	O&M Cost/ Track Mile	O&M Cost/ Passenger
Dallas, TX	45,991	4,576	2.4	236,074	$389,000	$8.46	$85.01	$162,083	$1.65
Detroit, MI			1.0	109,500	$500,000			$500,000	$4.57
Galveston, TX	21,275	4,750	4.5	120,465	$325,000	$15.28	$68.42	$72,222	$2.70
New Orleans, LA	677,923	111,563	15.1	8,942,500	$3,400,000	$5.02	$30.48	$225,166	$0.38
Portland, OR			1.5		$265,000			$176,667	
San Jose, CA	22,400	4,480	4.5	143,322	$641,500	$28.64	$143.19	$142,556	$4.48
Seattle, WA	30,800	6,400	2.0	198,300	$579,600	$18.82	$90.56	$289,800	$2.92

Notes:

Tri–Met initiated vintage trolley service on a downtown segment of the LRT line in December 1991; consequently, operating statistics are not yet available.

Data for the Denver Rail Heritage Society and the Fort Collins Municipal Railway were not available. Both trolley services are operated by non–profit organizations.

What are the capital costs associated with vintage trolley systems?

Purchasing reproduction cars generally is more expensive than restoring an old trolley car. The Denver Rail Heritage Society has a lease/purchase agreement with Gomaco for a reproduction diesel/electric trolley. The original purchase price in 1986 was $350,000. The Park Board of Trustees of Galveston and Tri-Met purchased reproduction cars from Miner Railcar Services, Inc. at a cost of approximately $450,000 to $500,000 per car. As noted previously, Gomaco builds new bodies for use with older PCC or Melbourne trucks while Miner Railcar Services builds all new components.

It is more difficult to ascertain the average cost of restoring a true vintage trolley. Car restoration projects have frequently been done with volunteer labor and some level of contributed materials. In 1988, the New Orleans RTA began a major capital project to refurbish its entire fleet of 35 vintage (1923 - 1924) Perley Thomas streetcars. The refurbishment project includes complete overhaul of mechanical systems and body repair and painting. The five year project will cost $9 million (approximately $275,000 per car).

Construction of new track on a street where none previously existed can be quite expensive. In 1990, Seattle Metro completed a .4 mile extension of its Waterfront Streetcar line at a cost of $6 million ($15 million per mile). The one mile single track, with bypass in middle, constructed by the Detroit Department of Transportation in 1976 cost approximately $2.3 million.

Resurrection of an abandoned route, with track in place, is considerably less expensive than constructing new track. However, many street railway properties were in poor condition when abandoned. The condition of the old track and the location of public utility distribution systems above and below the route will determine the cost. Utility relocation is a major cost item associated both with reclaimed and new track projects.

The New Orleans RTA competed a $14.8 million capital project to reconstruct 13 miles of track bed and install new rail on the St. Charles Streetcar Line in May 1990, for a per mile cost of $1.1385 million.

How are the vintage trolley systems funded?

Exhibit 6 summarizes the sources of funding for capital and operations for each vintage trolley system. The Federal Transit Administration provided capital funding for construction of the McKinney Avenue Line in Dallas, the vintage trolley service on the Strand in Galveston, the New Orleans Riverfront Line, the Seattle Waterfront Line, the Banfield LRT line in Portland (including the vintage trolley) and the San Jose Transit Mall. FTA is currently participating in the New Orleans Regional Transit Authority's $47 million capital improvement project to completely overhaul the St. Charles Streetcar Line (track, streetcars and maintenance facility).

EXHIBIT 6
FUNDING FOR VINTAGE TROLLEY SYSTEMS

Trolley Line	Capital Funding	Operations Funding
Dallas, TX	Initial construction project ($5.5 million) funded by FTA ($2.5 million; 45%) and private grants ($3 million; 55%) The City spent $.2 million on signage, pavement marking and signal relocation Two vehicles were donated, one is leased and one was purchased Corporate sponsors contribute funding for restoration of each vehicle	During the first two years, farebox and private sources Beginning in 1990, FTA Section 9 operating assistance
Denver, CO	Foundations, Society Board members, and corporate matching grants	farebox, private contributions, Mayor's Office of Economic Development, and RTD subsidy of insurance costs
Detroit, MI	State of Michigan Federal Title X, Public Employment Act City of Detroit (capital and in-kind service) Community Development Block Grants Private donations	farebox, City and State subsidies
Ft. Collins, CO		fares, society member dues
Galveston, TX	FTA planning grant Construction funded 80% FTA, 7% State, and 13% private sector	farebox Park Board of Trustees and two private sector organizations agreement to underwrite loss for first 3 years; extended additional 2 years FTA Section 9 beginning in 1991 (4th year)
New Orleans, LA	1988 capital improvment program to renovate St. Charles line funded $35 M (74%) FTA and $12 M (26%) local match Technical studies for Riverfront line funded with private contributions Construction funded 67% FTA ($2.6 M) and 33% RTA ($1.3 M)	farebox, RTA sales tax, FTA Section 9 operating assistance farebox and private grants
Portland, OR	Construction funded as part of Banfield LRT line, with FTA and Vintage Trolley Inc. funding	farebox, corporate contributions, Local Improvement District self-imposed tax on properties adjacent to trolley
San Jose, CA	Transit Mall constructed by City funded by FTA (71%) and the City and SCCTD (29%) San Jose Trolley Corporation restoration of vehicles funded by private contributions	fares, FTA Section 9 operating assistance
Seattle, WA	Initial segment construction funded by FTA (24%), City (48%) and local businessmen (28%)	
Memphis, TN *under construction*	Interstate Transfer Funds (77%) State Funds (7%) Local Funds (7%) Private sector contributions (9%)	

Several vintage trolley systems were developed through public/private ventures. The FTA provided 45 percent of the capital funding for the McKinney Avenue Line, while the remaining 55 percent came from private grants. The FTA contributed 80 percent of the funding for the vintage trolley in Galveston, the State contributed 7 percent and the private sector contributed the remaining 13 percent. The FTA provided approximately 34 percent of the capital funds for the Seattle Waterfront Line; the City provided 48 percent and local businessmen provided the remaining 28 percent.

The vintage trolley systems in Denver and Fort Collins were funded by society member dues and private contributions; no public funds were used.

The FTA is currently funding, through Section 9 operating assistance grants to the local public transit agencies, the vintage trolley operations in Seattle, San Jose, New Orleans, Dallas, and Galveston. The McKinney Avenue Transit Authority in Dallas covered its operating deficit during its first two years of operation by fares and private contributions. Beginning with the third year of operations (1990), FTA Section 9 operating assistance is being used towards the operating deficit. The Park Board of Trustees of Galveston and two private sector organizations entered into an agreement to underwrite the loss of the vintage trolley operation in Galveston during its first three years. The three organizations subsequently extended the agreement for an additional two years. FTA Section 9 funds are also being used, beginning with the fourth year of operations.

In Portland, a Local Improvement District (LID) imposes taxes on properties adjacent to the trolley operations. The funds go to the Vintage Trolley Inc. which reimburses Tri-Met for operating the vintage trolley service along the downtown portion of the LRT line.

Comparison to Downtown Bus Circulator Systems

Appendix B contains detailed descriptions of each of the four downtown bus circulator systems researched. Exhibit 7 presents a summary of the key information for these systems. Exhibit 8 presents cost effectiveness and efficiency measures.

The information on the Trolley 2 service in Memphis is based on a Comprehensive Operations Analysis (COA) conducted in 1988. The transit operator, Memphis Area Transit Authority, does not routinely collect operating data specific to the Trolley 2 route.

The 16th Street Mall in Denver serves as an integral part of the transportation system. It serves as the downtown distribution point for all express park and ride service and also serves a pronounced mid-day shopping and restaurant market. The mall has been a significant factor in the health of the downtown area.

EXHIBIT 7
DOWNTOWN BUS CIRCULATOR SYSTEMS – SUMMARY OF KEY INFORMATION

Bus Circulator System	Route	Vehicles	Hours/Days of Operation	Headways	Fare	Annual Operating Statistics			Annual O & M Costs	Annual Fare Revenues	Capital Costs
						Miles	Hours	Passengers			
16th Street Mall Regional Transit District Denver, CO	1 mile transit/ pedestrian way spanning 14 blocks downtown	6 electric battery powered buses 20 special low-emission diesel engine buses	365 days/year 7 days/week 6am – 12am	peak – 70 second non-peak – 2 to 5 minute	free	309,000	77,323	13,000,000	$5,350,000	$0	Mall Project – $76.3 M $29.0 M Transitway $13.9 M Market Street Station $21.4 M Civic Center Station $ 5.1 M Shuttle Vehicles
Trolley 2 Memphis Area Transit Authority Memphis, TN	5.5 round trip loop through Medical Center, along Madison, and loop through downtown	5 trolley look buses manufactured by Chance Manufacturing Company	weekdays 6:30am – 5:30pm	20 minute	$.35	200 (1988 weekday)	25.3 (1988 weekday)	861 (1988 weekday)	n/a	n/a	trolley look buses (1990) – $164,900 each
Hop A Bus Dallas Area Rapid Transit Dallas, TX	11.1 miles three circulating downtown routes	10 1986 Neoplan 440 buses (8 active, 2 spares)	weekdays 6:30am – 6:30pm	green route – 10 minute red route – 5 to 12 minute blue route – 11 to 12 minute	$.25	207,104	n/a	377,866	$492,728	$94,500	n/a
Texas Specials Metropolitan Transit Authority of Harris County Houston, TX	two routes providing shuttle service throughout downtown and a portion of the near east and south sides	6 buses (each) from regular fleet (not dedicated)	weekdays 11am – 3pm	6 minute	$.30	89,585	13,399	452,120	$563,000	n/a	n/a

EXHIBIT 8
COST EFFECTIVENESS AND EFFICIENCY OF BUS CIRCULATOR SYSTEMS

Bus Circulator System	Annual Vehicle Miles	Annual Vehicle Hours	Annual Passengers	Annual Operating & Maintenance Costs	O&M Cost/ Vehicle Mile	O&M Cost/ Vehicle Hour	O&M Cost/ Passenger	Passengers/ Mile
Hop A Bus (Dallas, TX)	207,104	n/a	377,866	$492,728	$2.38	n/a	$1.30	1.8
16th Street Mall (Denver, CO)	309,000	77,323	13,000,000	$5,350,000	$17.31	$69.19	$0.41	42.1
Texas Special (Houston, TX)	89,585	13,399	452,120	$563,000	$6.28	$42.02	$1.25	5.0
Trolley 2 (Memphis, TN) *	200	25	861	n/a	n/a	n/a	n/a	4.3

** Data presented for Trolley 2 are average daily operating statistics.*

Other Vintage Trolley Projects

During the study, KPMG Peat Marwick identified several other operating vintage trolley systems. We did not collect detailed information on these systems because they serve a tourist function and are not available to the general public. The **National Park Service (NPS) in Lowell, Massachusetts** operates a trolley line in the Lowell National Historical Park, a state heritage park portraying America's Industrial Revolution. The NPS operates vintage trolley replicas over old Boston and Maine railway tracks linking the mills to the mainline. The sole purpose of the trolley service is to transport tour groups between park attractions.

The **Grand Cypress Resort in Orlando, Florida** operates vintage trolleys on a 3.5 mile line constructed to serve as an internal transportation system linking all areas of the resort.

A number of cities across the country are planning vintage streetcar operations. A sample of these are described below. As with existing operations, the development and ultimate operation of the systems vary; some may result in requests for federal funding.

Charlotte, North Carolina. The Charlotte Trolley, Inc. will be officially organized as a non-profit, 501(c)(3) organization in April 1992. Plans are underway for the Charlotte Trolley, Inc. to operate and maintain historic trolley service initially over 1 mile of track owned by Norfolk Southern, which connects two historic districts, Dilworth and Wilmore, with the center city and passes the site of the new Convention Center which will be completed in 1995. Charlotte Trolley, Inc. will lease, at a nominal fee, two vintage trolleys from the Charlotte-Mechlinberg Historic Landmark Commission. The Commission acquired and is in the process of restoring two vintage trolleys -- a single truck trolley built by J.G. Brill Company in 1896 and previously operated in Athens Greece, and a double truck closed car previously operated in Charlotte which has been completely rebuilt. Acquisition and restoration of the trolleys cost approximately $350,000 and was funded with approximately 15 percent municipal funds and 85 percent private funding. The Commission is lobbying for a portion of a $1 million corridor improvement bond for the South Boulevard corridor to fund the cost to upgrade and electrify the track, estimated at $400,000. The service, which is viewed as a cultural amenity, will probably begin operation in 1993 and will initially run on an excursion basis.

Once the Convention Center is completed in 1995, the City will need to re-examine the function of the trolley service, as conventions will likely increase demand. If it has proved viable, the service may be turned over to the City and additional service implemented. An additional 1.3 miles of track could be used in the service; however, this segment of track has been severed when a bridge was removed during construction of the Convention Center.

Frederick, Maryland. In 1988, the Mayor of Frederick appointed a Committee to establish historic trolley service along existing state-owned rail freight tracks from East Patrick Street in the downtown historic area to a planned linear park along Carol Creek, which runs through town and empties into the Monacacy River east of town. The existing track runs from Frederick to Walkersville, a rapidly expanding residential area northeast of Frederick and into

the Monacacy National Battlefield Park, south of Frederick. Long range plans include seven miles of trolley operations, which would serve both as a tourist attraction and a transit line through downtown Frederick. The current chairman of the Committee, Ed Metka, owns 26 PCC cars built in the 1940s. He brought three cars, previously operated by the Southeastern Pennsylvania Transit Authority (SEPTA), to Frederick. One of the cars is in near-working condition. The trolley project is moving slowly, while decisions and commitments are made. The project is seeking private sector financing, particularly from developers along the linear park and at the proposed transportation center.

Johnstown, Pennsylvania. The Commonwealth of Pennsylvania and the National Park Service, through the American Industrial Heritage Program, are actively developing a number of national parks in Pennsylvania along the themes of coal mining, steel and transportation. One site which will be developed into a park is an old iron and steel works near Johnstown. Plans are to link the park to downtown Johnstown (about 2 miles) via a vintage trolley line over existing rail tracks, currently used minimally. A demonstration project will be launched in 1992 using 2 PCC cars and a generator. Ed Metka, Vintage Electric Streetcar Company, recently acquired 14 PCC cars from the Metropolitan Boston Transit Authority (MBTA); several are ready to operate, after being cleaned up. The local transit authority owns another section of track on the south side of town, which is physically linked. The State is funding a feasibility study, both for the demonstration and permanent line. The demonstration project will be operated by the Vintage Electric Streetcar Company as a contractor to the Cambria County Transit Authority in Johnstown.

APPENDIX A

DESCRIPTIONS OF VINTAGE TROLLEY SYSTEMS

Dallas, Texas

McKinney Avenue Transit Authority
Dallas, Texas

Institutional Arrangement

The McKinney Avenue Transit Authority (MATA), a non-profit 501(c)(3) corporation, was organized on February 4, 1983 to restore, operate and maintain a street car system over the historic trolley tracks along McKinney Avenue in Dallas, Texas. The City Council granted MATA an operating franchise on January 23, 1986 and service was initiated on July 22, 1989. The organization utilizes a largely volunteer work force.

Background

In 1981, an area along Dallas' McKinney Avenue was undergoing redevelopment, including restoration of the brick street. A double-track streetcar line in generally good repair was uncovered when the asphalt was removed. Streetcar service was last operated in Dallas in January 1956. A civic leader with business interests along the route suggested that a vintage trolley service would enhance the ambiance and business activity in the area. Since MATA's start-up, merchants on and near the Avenue have reported significant increases in business.

Equipment

MATA currently operates four carefully restored vintage electric streetcars:

- **Car 122**, built in 1906 by J. G. Brill of Philadelphia and operated for 72 years in Oporto, Portugal, was purchased and donated to MATA by the businessman who first suggested the vintage system. It is the oldest and smallest of the fleet, and is entirely of wood construction. It seats 23 and is the most elegant of the cars.

- **Car 636**, built by J. G. Brill of Philadelphia in 1920 for the Dallas Consolidated Electric Street Railway, was purchased, restored and leased to MATA by one of the board members. This car seats 28 and stands 20.

- **Car 186** was built by St. Louis Car Company in 1913 for Dallas Consolidated Street Railway and designed by Stone & Webster Engineering Co., who operated the railway. It was scrapped in 1956. The carbody was restored and went to the Sports Hall of Fame for static display for several years. The carbody was donated to MATA 1988. MATA outfitted and re-equipped the car body for operation. The car can seat 40 and stand 20.

- **Car 369**, built in Melbourne, Australia by the Melbourne Metropolitan Tramways Board in 1925, was purchased by MATA in late 1985. The car had been in active service up to that time. MATA remodeled the car extensively. It is the largest MATA car, with three compartments and capacity to seat 54 and stand 40 passengers.

In addition, MATA has the carbody of Dallas Railways #323 in storage. This car was designed by Stone & Webster and built by the American Car Company in 1914. MATA has first option to purchase four Dallas Stone & Webster car bodies (#183, #188, #189, and #190).

MATA operates streetcar service over 2.8 route miles (2.4 miles of track) along McKinney Avenue, connecting the central business district with McKinney Avenue businesses and restaurants. The line starts at St. Paul Street and Ross Avenue and continues along McKinney Avenue to Bowen Street. The track is primarily reclaimed street car trackage previously used by the Dallas Consolidated Street Railway and paved over after the service ended. New track was laid on Hall Street. A full round trip is 2.8 miles and takes 30 minutes.

The carbarn, a converted warehouse, is located on Bowen Street, at the northern end of the line.

Service

MATA operates the vintage trolley service 365 days per year, from 10 a.m. to 10 p.m. Sunday through Thursday and from 10 a.m. to 12 midnight Friday and Saturday. Service is operated at 15 minute headways from 11 a.m. to 2 p.m. on weekdays, on Friday evenings and all day Saturday and Sunday. At all other times, headways are 30 minutes. Charter service is also available.

MATA is able to adjust its service as demand varies. It can reduce service to fewer cars on days when few riders appear. Likewise, cars are sometimes operated well past normal shut-down time when large conventions come to Dallas.

In 1990, MATA carried 236,074 passengers and operated 45,991 trolley car miles and 4576 hours. MATA's ridership load factor is approximately double that of the surrounding public bus system.

Fare Structure

As of January 1991, one-way fare is $.75 for adults, $.50 for children ages 3 through 12, and $.25 for senior citizens (age 63 and up) and persons with disabilities. Fares are double for round trips.

MATA also sells tokens in rolls, which are slightly discounted, i.e., a roll of 22 one-way tokens costs $15 or $.68 each. One-day ($3.00), three-day ($7.50) and monthly ($20.00) passes are also available, which allow unlimited riding for the duration of the pass.

Capital Projects

A local businessman secured a professional feasibility study to support the concept, pro-bono public relations and advertising to hold fund-raising events, pledges from local business, initial city support and two FTA construction grants. MATA's initial construction costs, $5.5 million, were funded with $3 million in private grants and $2.5 million from FTA ($1.3 million in 1984 and $1.2 million in 1987). The city government spent approximately $200,000 for signage, pavement marking and relocation of traffic signals.

Two of the cars were donated to MATA, one is leased to MATA, and the other was purchased by MATA. Each of the four cars has one or more corporate sponsors who have paid for its restoration. The carbarn, a converted warehouse, is leased to MATA for $1 per year.

Car #122, which was cosmetically restored by an outside contractor during MATA's early planning stages had to be withdrawn from service for major rebuilding. The Rosewood Corporation provided a $30,000 grant to overhaul car #122, including a complete rebuild of all moving parts in the truck as well as body reinforcement to limit shaking and provide a smoother ride.

Operating and Maintenance Costs

MATA's 1991 operating budget is $389,000. Labor is MATA's largest cost, even though more than sixty percent is volunteer. Insurance is the second-largest cost. The Texas Senate passes a bill limiting liability of city-contracted private transport firms to that of the public city transit.

Revenues

MATA is a joint public/private venture. The first two years of operation were funded entirely by farebox earnings and private sources. MATA covered forty-six percent of its costs at the farebox in 1990. Charters have been key revenue generators. Additionally, MATA launched a merchandising program of vintage trolley related souvenirs. When other revenue items, such as donations, membership dues and merchandise sales, are included, 1990 cost recovery was eighty-five percent. Supplemental private guarantees have covered the deficit.

MATA was granted FTA Section 9 operating assistance for 1990 and 1991; however, the grant has been held up due to union 13(c) disagreement between the international bus drivers' union and the Dallas Area Rapid Transit System (designated recipient of Section 9 funds).

Workforce

MATA utilizes a largely (over 60 percent) volunteer workforce. Currently it employs one operator with a volunteer roster of 28. Other MATA employees include the Chief Executive Officer, two maintenance personnel, an operations manager, and a marketing and public relations director.

Future Plans

The terminus of MATA's 2.8 mile route is less than six blocks from the West End Historical District, an area of restored early 20th century warehouses that now house a variety of restaurants, nightclubs, and offices. MATA is conducting preliminary planning to extend the track to the West End. One route to the West End requires new street trackage from MATA's south terminus (St. Paul Street). An alternate route connects MATA's northern end with soon-to-be abandoned railroad line that passes the West End directly. This route would also provide access to another business/leisure area, the Quadrangle, and would pass potential business sites now dormant. Together the two routes would allow MATA to loop its route with double track.

Contact

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Chief Operating Officer
McKinney Avenue Transit Authority
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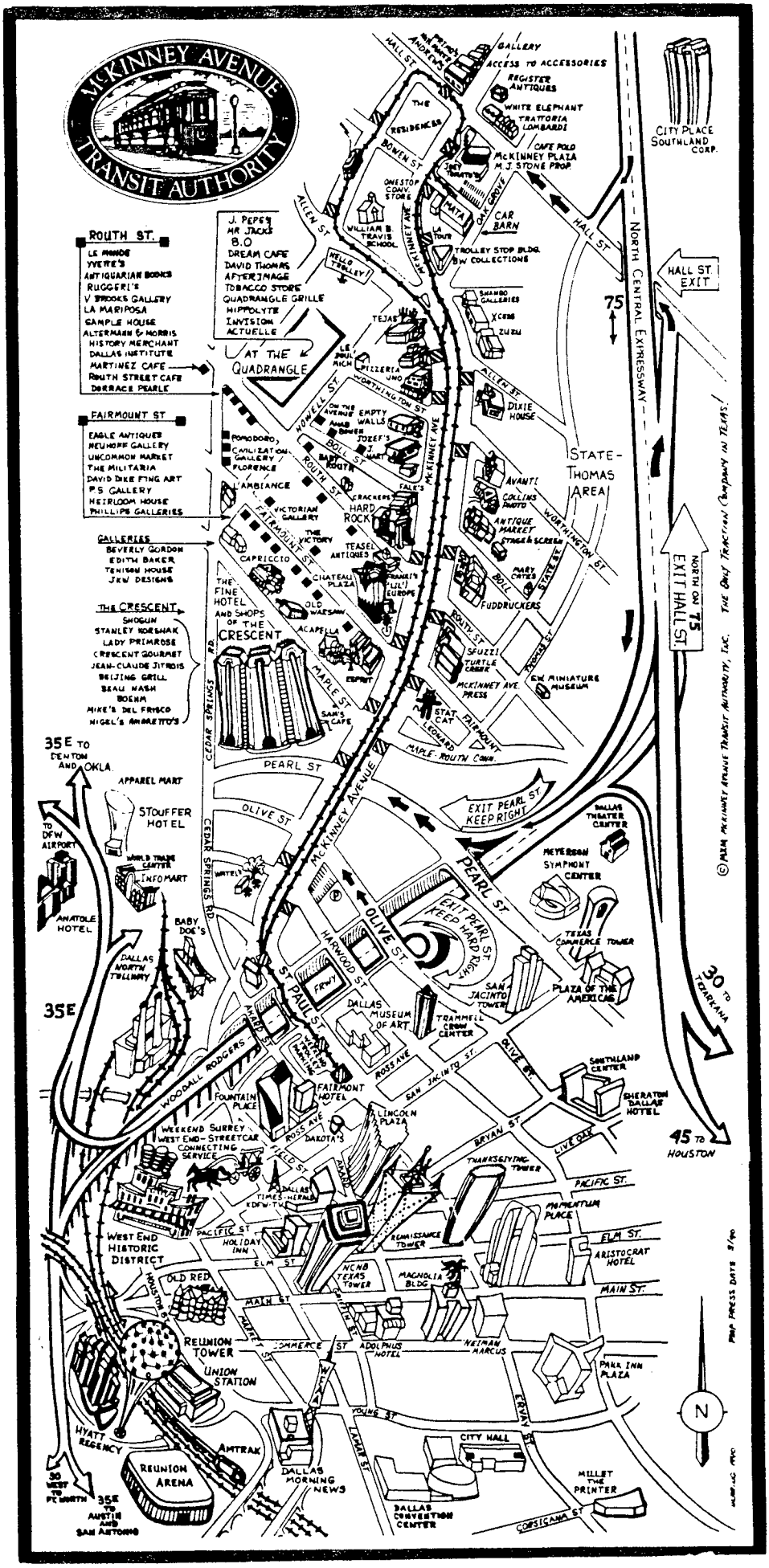
McKINNEY AVENUE TRANSIT AUTHORITY
ROUTH ST.
LE MONDE
YVETTE'S
ANTIQUARIAN BOOKS
RUGGERI'S
V BROOKS GALLERY
LA MARIPOSA
SAMPLE HOUSE
ALTERMANN & MORRIS
HISTORY MERCHANT
DALLAS INSTITUTE
MARTINEZ CAFE
ROUTH STREET CAFE
DORRACE PEARLE
FAIRMOUNT ST
EAGLE ANTIQUES
NEUHOFF GALLERY
UNCOMMON MARKET
THE MILITARIA
DAVID DIKE FING ART
P.S. GALLERY
HEIRLOOM HOUSE
PHILLIPS GALLERIES
GALLERIES
BEVERLY GORDON
EDITH BAKER
TENISON HOUSE
JKW DESIGNS
THE CRESCENT
SHOGUN
STANLEY KORSHAK
LADY PRIMROSE
CRESCENT GOURMET
JEAN-CLAUDE JITROIS
BEIJING GRILL
BEAU NASH
BOEHM
MIKE'S DEL FRISCO
NIGEL'S AMARETTO'S
J. PEPE'S
MR JACK'S
B.O.
DREAM CAFE
DAVID THOMAS
AFTER IMAGE
TOBACCO STORE
QUADRANGLE GRILLE
HIPPOLYTE
INVISION
ACTUELLE
AT THE QUADRANGLE
GALLERY
ACCESS TO ACCESSORIES
REGISTER ANTIQUES
WHITE ELEPHANT
TRATTORIA LOMBARDI
CAFE POLO
McKINNEY PLAZA
M.J. STONE PROP.
CITY PLACE SOUTHLAND CORP.
HALL ST.
HALL ST. EXIT
NORTH CENTRAL EXPRESSWAY
75
STATE-THOMAS AREA
NORTH ON 75 EXIT HALL ST.
EXIT PEARL ST. KEEP RIGHT
EXIT PEARL ST. KEEP HARD RIGHT
PEARL ST
OLIVE ST
McKINNEY AVENUE
CEDAR SPRINGS RD.
35E TO DENTON AND OKLA.
35E
30 TO TEXARKANA
45 TO HOUSTON
30 WEST TO FT. NORTH
35E TO AUSTIN AND SAN ANTONIO
APPAREL MART
STOUFFER HOTEL
TO DFW AIRPORT
INFOMART
ANATOLE HOTEL
BABY DOE'S
DALLAS NORTH TOLLWAY
WOODALL RODGERS
FOUNTAIN PLACE
FAIRMOUNT HOTEL
WEEKEND SURREY
WEST END-STREETCAR CONNECTING SERVICE
DALLAS TIMES-HERALD
WEST END HISTORIC DISTRICT
OLD RED
REUNION TOWER
UNION STATION
HYATT REGENCY
AMTRAK
REUNION ARENA
DALLAS MORNING NEWS
DALLAS CONVENTION CENTER
CITY HALL
MILLET THE PRINTER
PARK INN PLAZA
NEIMAN MARCUS
ADOLPHUS HOTEL
MAGNOLIA BLDG
NCNB TEXAS TOWER
RENAISSANCE TOWER
MOMENTUM PLACE
ARISTOCRAT HOTEL
THANKSGIVING TOWER
SHERATON DALLAS HOTEL
SOUTHLAND CENTER
TRAMMELL CROW CENTER
SAN JACINTO TOWER
PLAZA OF THE AMERICAS
TEXAS COMMERCE TOWER
MEYERSON SYMPHONY CENTER
DALLAS THEATER CENTER
DALLAS MUSEUM OF ART
FRWY
HARWOOD ST
ST. PAUL ST
ROSS AVE
SAN JACINTO ST
BRYAN ST
LIVE OAK
PACIFIC ST
ELM ST
MAIN ST
COMMERCE ST
YOUNG ST
ERVAY ST
CORSICANA ST
LAMAR ST
HOUSTON ST
MARKET ST
GRIFFIN ST
WEST END HISTORIC DISTRICT
HOLIDAY INN
LINCOLN PLAZA
DAKOTA'S
FIELD ST
AKARD ST
WATER
FRANKLIN'S LIL' EUROPE
CHATEAU PLAZA
OLD WARSAW
ACAPELLA
ESPRIT
SAM'S CAFE
CAPRICCIO
THE FINE HOTEL AND SHOPS OF THE CRESCENT
VICTORIAN GALLERY
THE VICTORY
TEASEL ANTIQUES
HARD ROCK
CRACKERS
FALK'S
BABY ROUTH
JOZEF'S
EMPTY WALLS
ON THE AVENUE
AHAB BOWEN
POMODORO
CIVILIZATION GALLERY
FLORENCE
L'AMBIANCE
ROUTH ST
BOLL ST
HOWELL ST
WORTHINGTON ST
ALLEN ST
McKINNEY AVE
TEJAS
LE BOUL MICH
PIZZERIA UNO
DIXIE HOUSE
AVANTI
COLLINS PHOTO
ANTIQUE MARKET
STAGE & SCREEN
MARY CATES
FUDDRUCKERS
SFUZZI
TURTLE CREEK
McKINNEY AVE. PRESS
EW MINIATURE MUSEUM
STAT CAT
LEONARD
FAIRMOUNT
MAPLE-ROUTH CONN.
MAPLE ST
THOMAS ST
STATE ST
WORTHINGTON ST
ALLEN ST
HALL ST
BOWEN ST
ONESTOP CONV. STORE
WILLIAM B. TRAVIS SCHOOL
HELLO TROLLEY
MATA
LA TOUR
OAK GROVE
CAR BARN
TROLLEY STOP BLDG. BW COLLECTIONS
SHANGO GALLERIES
XCESS
ZUZU
THE RESIDENCES
ANDREWS
PRIMO'S MIN MAKER
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Denver, Colorado

Platte Valley Trolley
Denver, Colorado

Institutional Arrangement

The Denver Rail Heritage Society was formed in July 1988. It is a non-profit organization with 501c)(3) designation. The Society has about 100 members. It was formed with a nucleus of members of the Rocky Mountain Railroad Club, which was formed in 1950 and briefly operated occasional picnic trips on the surviving electric freight lines in 1951 and 1952.

The Society began historic trolley operations on July 1, 1989 serving the Forney Transportation Museum, the Denver Children's Museum, and Mile High Stadium. The Society utilizes all volunteer labor (motormen and conductors) to operate the trolley service.

Equipment

The Denver Rail Heritage Society currently operates 1 reproduction diesel-electric tram manufactured by Gomaco Trolley Company in 1986 through a lease-purchase agreement with Gomaco. The car currently operates with electric power supplied to the traction motors by a diesel-electric generator. The car is an open car and is stored at the Forney Transportation Museum.

The Rocky Mountain Railroad Club is refurbishing Denver & Intermountain car #25, which it purchased in 1950 when passenger service ceased. The Denver Rail Heritage Society is planning to use this car once refurbishment is complete, sometime after 1992. The terms of the loan/lease agreement have not yet been worked out.

The service is operated over approximately 3.5 miles of track, including:

- 1.5 miles of Burlington Northern freight track from near the Forney Transportation Museum (formerly the tramway power house) through Confluence Park to West Colfax Avenue, along the South Platte River

- 2.0 miles of old Interurban track which was purchased by the Denver Regional Transit District (RTD) in December 1988

The Society has an operating agreement with Burlington Northern for use of the track and is in the process of purchasing the track operating rights and easement from Burlington Northern. The Society has an operating agreement with RTD for use of its track, which was recently extended for an additional five years.

Service

The Society operates two services:

- **River Ride** - a 1/2 hour route along the South Platte River from 15th Street to Old West Colfax Avenue

- **Trolley Excursion** - a one-hour excursion along Lakewood and DryGulch and out to Sheridan Boulevard

Service on the River Ride route is operated daily from 11 a.m. to 5 p.m. from April 1 through the end of October. Trolley Excursion service is generally operated at 6 pm on Wednesday, Friday, Saturday and Sunday. Service is also continued through the Bronco's football season. Charter service is available during all seasons.

The Platte Valley Trolley carried 31,430 passengers in 1989, 43,478 passengers in 1990, and 32,722 passengers through October 1991. The majority of passengers are carried during the summer months. The last week in October, when the Children's Museum has a large event, produces about 9,000 passenger trips.

Fare Structure

The fare for the 1/2 hour trip is:

adults	$2
seniors	$1
children	$1

The fare for the 1 hour excursion is:

adults	$4
seniors	$3
children	$2

Capital Projects

The original purchase price for the Gomaco reproduction tram was $350,000. The variable lease purchase agreement allows the Society to pay $5,000 per month during operating season and $500 per month during off-season. Additionally, during the first year of the lease, no payments were required during the off-season. The Society would need $290,000 to complete the purchase today.

The cost to purchase the operating rights for the Burlington Northern track is $26,000. This is being funded by various foundations, Society Board members, and several matching grants from organizations whose employees are on the Board, e.g., AT&T.

Priorities for future capital projects include:

- Completing purchase of Gomaco car
- Acquiring second car
- Acquiring indoor storage for the car(s)
- Hanging wire along the Burlington Northern line

Operating and Maintenance Costs

Major cost items include:

- Insurance. During the first two years of operations, the Burlington and Northern required the Society to carry a $10 million liability policy, resulting in a $36,000 premium per year. Under the new agreement, where the Society is purchasing the track, the insurance premium will be $15,000. The insurance costs have been subsidized by the RTD.
- Track Maintenance
- Staff. The Executive Director/Deputy General Manager is the only full-time staff, with a salary of $24,000.

Labor

The service is operated with all volunteer labor, with the exception of the Executive Director/Deputy General Manager.

Revenues

Fare revenues were $35,438 in 1989, $61,311 in 1990 with an additional $8,542 excursion fares, and $45,611 through October 1991.

The Society receives subsidies from a variety of sources, including:

- RTD, which subsidizes insurance costs
- the Mayor's Office of Economic Development, which provides approximately $12,000 per year
- Elitch Gardens (an amusement park) provides about $3,500 per year
- Board members contribute several thousand dollars per year
- Representative Pat Schroeder contributed $2,000 last year

Future Plans

The Colorado State Public Utilities Commission granted the Society permanent operating authority in 1991.

The Society is actively working to gain support for an extension of the trolley tracks into Lower Downtown from the existing tracks along the west side of the Platte River. Extension of the tracks into Lower Downtown and to the RTD 16th Street Mall would allow the Platte Valley Trolley to serve the Sports Complex when the Colorado Rockies begin playing there in 1993 and the new Coors Field when it opens.

The Society recently submitted a letter to the Mayor requesting that a Trolley Development Committee be appointed to examine the potential implementation of a trolley expansion program.

Additionally, the Society wants to expand west into Lakewood after a connection to Lower Downtown is secured.

Contact

Rick McNeal
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Denver Rail Heritage Society
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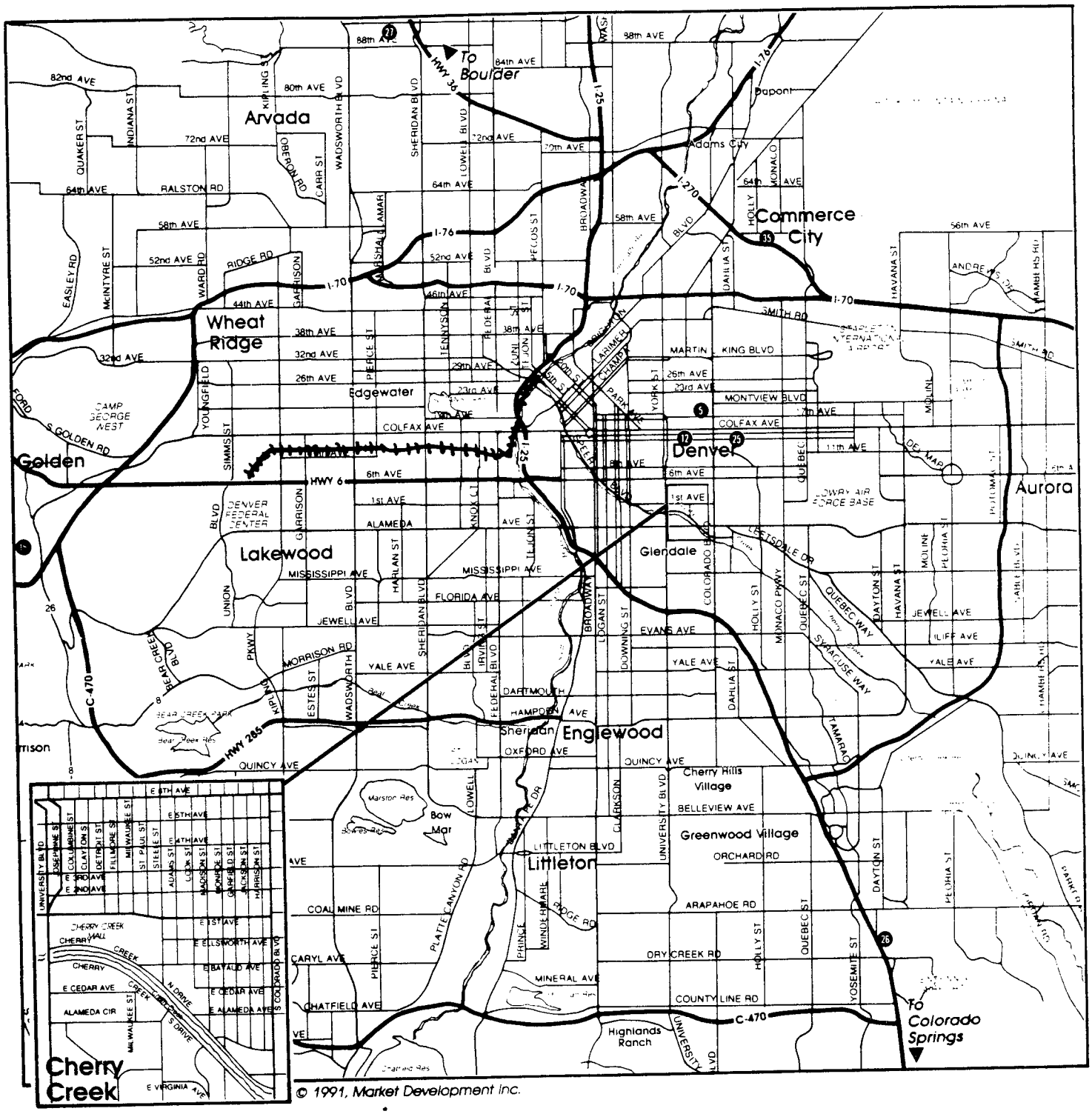
Platte Valley Trolley



Trolley

Detroit, Michigan

Detroit Citizens' Railway
Detroit, Michigan

Institutional Arrangement

The City of Detroit owns the vintage trolleys which are operated and maintained by the Detroit Department of Transportation (DOT), Plant and Maintenance Division.

Background

In 1975, the Central Business District Association (CBDA) formed a committee to rehabilitate a five-block stretch of Washington Boulevard. The concept of operating vintage trolleys along Washington Boulevard to link the hotels with the Cobo Hall convention center, the new Hart Plaza, and the planned Renaissance Center on the waterfront was developed. The trolley line was constructed and vintage trolleys made their debut in Detroit in 1976, following several years of planning and searching for the cars. Acquiring and refurbishing the trolleys was a public/private partnership. The initial 3/4 mile line, along Washington Boulevard between Cobo Hall and Grand Circus Park, was developed to handle the heavy flow of convention goers. In 1980, the trolley line was extended another quarter mile to the Renaissance Center, passing Hart Plaza, where the city's ethnic festivals take place. This extension has made the trolley a more significant element in Detroit's transportation system. The trolley has become the principal means of access to the festivals, which attract about 5 million visitors annually, since parking in the area is restricted.

In conjunction with renovation of the trolley line, Washington Boulevard was converted into a pedestrian mall. Washington Boulevard has served as a spine for revitalization, and the vintage trolley has been a major factor in arresting the decline of the area.

Equipment

The one-mile route runs along the Detroit River from Renaissance Center to Cobo Hall/Exhibition Center, and north to the Grand Circus Park. The track is a single line with a bypass in the middle and shunt tracks at either end.

The fleet of electric-powered trolleys includes:

- four closed trolleys built by the St. Louis Car Company in 1899 and previously operated in Lisbon
- two closed trolleys built in Lisbon in 1925 and previously operated in Lisbon
- an open air trolley built in Philadelphia in 1901 and previously operated in Lisbon

- an open air, double-decker built in Great Britain in 1904 and previously operated in Burton-Trent, England

- a closed trolley built in 1895 in Berlin and previously operated in Vevey, Switzerland

The double-decker is the only one of its kind operating in the world.

Service

The trolleys operate along Washington Boulevard and Jefferson Avenue between Grand Circus Park and the Renaissance Center. Fourteen trolley stops are indicated by signs along the route; the trolleys can also be hailed.

The DOT operates three trolleys, each making 30 runs daily with a headway of 15 minutes. Weekday service runs from 7 a.m. to 6:30 p.m. and weekend service runs from 10 a.m. to 6 p.m. Weekend service is extended to 11 p.m. during the ethnic festival season (22 festivals lasting 3 to 4 days each) and other special events.

In 1979, the vintage trolley service carried approximately 75,000 riders. Today, the trolley carries approximately 300 patrons per day.

Fare Structure

Trolley fare is $.45. Senior citizens and babies (in arms) ride free of charge.

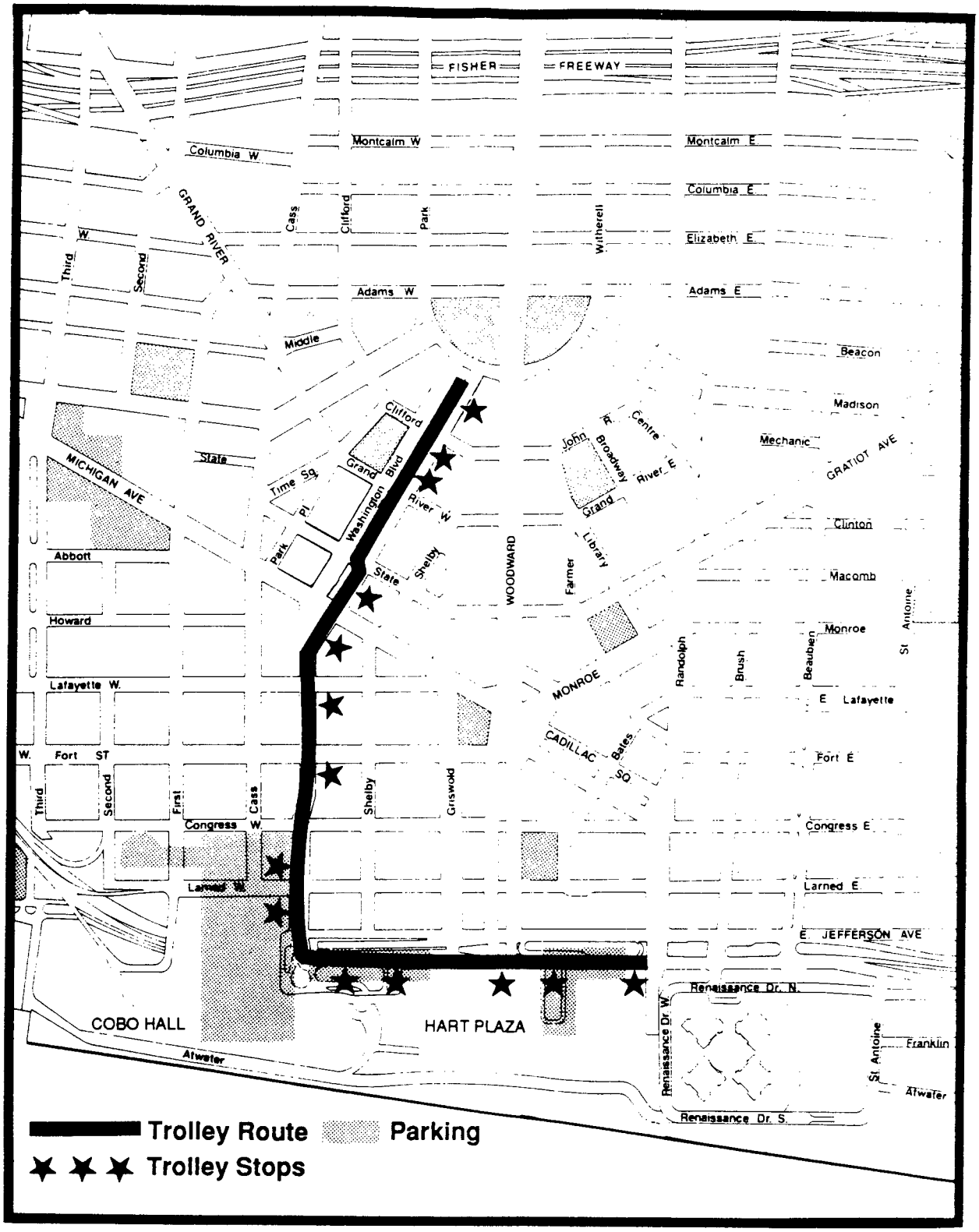
Capital Projects

The final cost of the line (original segment and 1980 extension)was $2.72 million which included the carbarn ($422,000). Financing came from a combination of sources:

■ $676,250	State of Michigan - General Transportation Fund
■ $422,000	Federal government - Title X, Public Employment Act
■ $280,000	City of Detroit - In-kind services, including installation of trolley wire, street lights, utility relocations, and landscaping
■ $200,000	City of Detroit - Capital funds
■ $220,000	Community Development Block Grants - Brick walkways and sewer modifications
■ $ 2,000	Donation from *The Detroit Free Press*
■ $920,000	City of Detroit - Capital funds for 1/4 mile extension to the Renaissance Center in 1980

Operating and Maintenance Costs	The annual operating budget is $500,000.
Revenues	The City of Detroit, the State of Michigan Commerce Department and fare box revenues fund the operation of the trolleys.
Contact	Alexander Pollock City Planner City of Detroit (313) 224-3520

Detroit Citizens' Railway



Fort Collins, Colorado

Fort Collins Municipal Railway
Fort Collins

Institutional Arrangement

The Fort Collins Municipal Railway Society was formed in 1980 to complete restoration of Car #21, built for and operated by the Fort Collins Municipal Railway between 1919 and 1951. In 1981, the Society entered into a formal agreement with the City of Fort Collins, which allowed the Society to restore 1.5 miles of the original line along West Mountain Avenue between the city park and downtown. The Society began historic trolley operations on the line in December 1984.

The Society is a not-for-profit organization of volunteers. Volunteers restored the car and track and currently operate and maintain the line.

Background

In 1919, the citizens of Fort Collins voted to purchase the streetcar system that formerly had been operated by the Denver & Interurban Railway. The City created the Fort Collins Municipal Railway in May 1919. The Railway resumed service that had previously been operated by the Colorado and Southern Railroad on a subsidiary street railway system, the Denver and Interurban Railway, between 1907 and 1918 prior to bankruptcy. The Fort Collins Municipal Railway operated from 1919 through June 1951, using 4 new single truck Birney Safety Cars (#20, #21, #22, and #23) purchased from the American Car Company, two Birneys (#24 and #25) purchased from the Virginia Transit Company in 1946, and another Birney (#26) purchased from Marion Railways (Indiana) in 1947 (built in 1918 for the Grand Rapids Railway Company and later sold to Marion Railways in Indiana in 1935).

The trolley service ended in June 1951 as spare parts became impossible to acquire. Car #21 was moved and put on static display behind the City museum. In 1977, the Junior Women's Club undertook restoration of the exterior of car #21 as a civic project.

Equipment

The Society operates one car, #21, which was purchased by the Fort Collins Municipal Railway in 1919. The car was operated through 1951, then put on display, and subsequently restored by the Society. A new carbarn was constructed in 1985.

The service is operated over 1.5 miles of Denver & Interurban track on the former Mountain Avenue line, restored in the early 1980s by the Society. The line runs from the City Park to the western edge of the business district. The line does not intersect the city bus service nor is there any coordination with the city bus service.

Service

The trolley service is operated on weekends and holidays from May through September. Charter service is also available during those months.

The trolley makes 10 round-trips per day between 12 noon and 5 p.m., weather permitting. The service is flexible and adapts to demand. Additional runs are sometimes made on holidays. An average of 10,000 passengers ride the trolley each year. The Society estimates that approximately one-third of its passengers are local residents.

Fare Structure

The fare for the round trip is $1.00 for adults, $.50 for children, and $.75 for senior citizens. Charter service costs $30 per hour.

Capital Projects

The 1.5 mile track and Car #21 were restored by volunteers. Volunteers are currently laying track into the new car barn. The Society is negotiating with a nearby museum for a second car which must be restored.

Operating and Maintenance Costs

The Society does not have any paid employees; all drivers and maintenance workers are volunteers. Currently, 24 people are active in the operation and maintenance of the line. The Society pays approximately $200,000 to insure Car #21.

Revenues

The service is funded entirely through fares and society member dues. The Society receives approximately $9,000 per year through fares and charter revenues. Over 300 Society members contribute through membership dues.

Contact

James Stitzel
President
Fort Collins Municipal Railway Society
(303) 224-5372

Galveston, Texas

The Trolley
Galveston, Texas

Institutional Arrangements

The Park Board of Trustees of Galveston is an autonomous agency established by State statute to be responsible for all tourist related activities in Galveston. The Board is appointed by City Council. The Board has 12 enterprises, with a $4 million budget. The City Council of Galveston contracts with the Board to operate historic trolley service along the "Strand".

Background

A 1973 report entitled "*The Strand - Restoration and Revitalization*" recommended a transportation system to connect various downtown attractions and the beachfront. The "*Galveston Connection Study*" in 1979 proposed a trolley to connect the Center for Transportation and Commerce, the Strand, Mechanic, and the beachfront. In 1983, the "*Action Plan for the Strand II*" updated plans for revitalizing the Strand area including the Trolley as an integral part of the overall program.

A potential vehicle supplier performed the first Galveston Trolley feasibility study in 1983. In 1984, the City of Galveston hired a consultant to pursue funding for the Trolley. An FTA planning grant was obtained to update the feasibility study, to prepare an environmental assessment, and to submit a grant application to FTA.

During 1986, final design of the trackwork, cars, and maintenance facility were completed. Construction began December 1, 1986. The trolley service was initiated in 1987.

The Trolley system is reminiscent of the original streetcars which offered service to Galveston from 1868 through 1938.

Equipment

The historic trolley service is operated over 4.7 miles of new track in the downtown area along Rosenberg Avenue from the Strand to the seawall on the south beachfront. Moody Terminal South and Strand Terminal North provide full information and ticket services. The Trolley has 24 designated "Trolley Stops", identified by signage, which provide access to more than 50 points of interest along the route.

The service is run using four steel-wheeled, self-propelled, diesel-electric vehicles manufactured by Miner Railcar Services, Inc. with historic, turn-of-the century appearance. The cars can accommodate 40 seated and 40 standing passengers.

A new maintenance facility was built at the west end of Sante Fe Place to maintain the cars.

Service

The trolley service is operated 365 days per year from 10 a.m. to 9 p.m. during the season (March through Labor Day) and from 10 a.m. to 6 p.m. during off-season (September through February). During the winter, the Trolley arrives hourly at the North and South terminals. During the summer, the Trolley arrives every 30 minutes.

During FY 90/91, the trolley carried 120,465 passengers and provided 21,275 miles and 4,750 hours of service.

Fare Structure

Each boarding is $1.00; a round-trip is $2.00. Seniors and children ride for one-half fare. Frequent rider and other passes are available. Transfers from the trolley to Island Transit, the local public bus system, are free; transfers from Island Transit to the trolley cost $.50. Transfers are available at 20th Street Transfer Center and at five locations along 25th Street.

Capital Projects

In 1984, the City received an FTA planning grant to update a feasibility study, prepare an environmental assessment, and submit a grant application. Construction of the system cost approximately $7,500,000, including the track and maintenance facility. Each car cost $500,000. The initial cost to construct the system was funded 80 percent by FTA, 7 percent by the State of Texas, and 13 percent by the private sector.

Operating and Maintenance Costs

Operating and maintenance costs are presented on the table on the following page. Twelve Board employees operate (9) and maintain (3) the service. The Board charges approximately $25,600 to the fund per year to cover accounting and other administrative functions it provides.

Revenues

The Park Board and two private sector organizations, the Moody Foundation and George P. Mitchell, have an agreement to underwrite the loss from the trolley operations for the first three years, up to $100,000 each. The Board originally estimated that the loss would be $300,000 per year; however, to date the service has been experiencing a loss of about $150,000 per year. The two private entities agreed to fund the deficit for two additional years, since their contribution during the first three year period did not reach the ceiling of $100,000 per year or $300,000.

Beginning with the fourth year of operation (FY 90/91), FTA has begun paying 50 percent of the deficit.

The table on the following page presents a summary of the operating costs, revenues, loss and subsidies since the initiation of service in 1987.

Contact

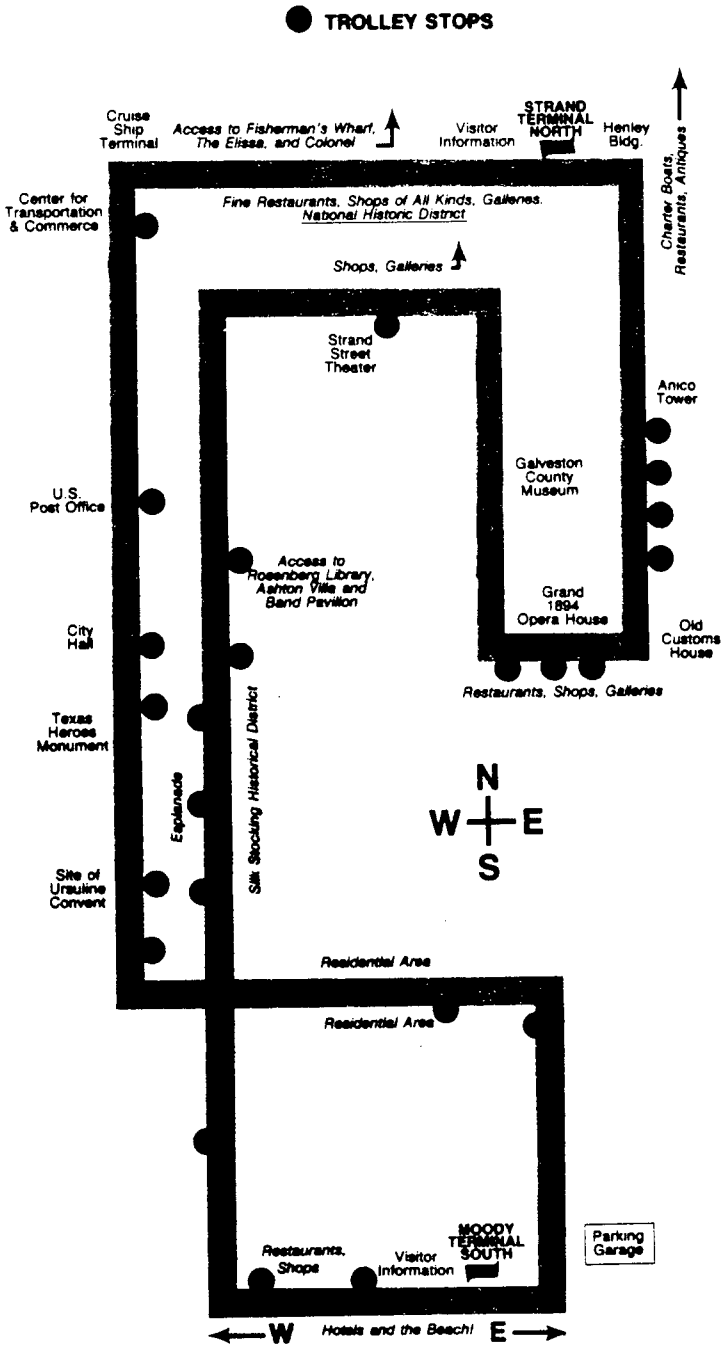
Don Schattel
Director
Park Board of Trustees of Galveston
(409) 763-6564

The Trolley
Operating Cost, Revenue, Loss and Subsidy

Year	Operating Cost	Revenues	Loss	UMTA	3 Funding Partners * *(each)*
87–88 partial	$113,486	$46,250	$67,236	$0	$22,000
88–89	$288,743	$187,236	$101,507	$0	$34,000
89–90	$328,811	$177,997	$150,814	$0	$50,000
90–91 projected	$325,000	$148,587	$176,413	$88,000	$29,000
91–92 proposed	$306,000	$140,000	$202,000	$101,000	$34,000

* The Park Board of Trustees of Galveston and two private sector organizations

Galveston Island Trolley



PARK BOARD
OF TRUSTEES OF THE CITY OF GALVESTON

New Orleans, Louisiana

St. Charles Streetcar
New Orleans, Louisiana

Institutional Arrangement

The St. Charles Streetcar line is owned and operated by the New Orleans Regional Transit Authority (RTA). The streetcar line is an integral part of the public transit network, serving both as a tourist attraction and a heavy-duty commuter route.

Background

In 1835, the New Orleans and Carrollton Railroad began streetcar service on St. Charles, then called the Carrollton line. The streetcar traveled from Canal Street to the resort town of Carrollton. It was powered by steam engine, horse and mule prior to electrification and introduction of electric cars, built by the St. Louis Car Company, in 1893.

In 1922, a reorganization of all power companies and street railways led to the New Orleans Public Service, Inc. (NOPSI) taking over operation of the streetcars. In 1923, the current streetcars, designed and built by the Perley A. Thomas Car Company, were introduced into service by NOPSI.

The Louisiana Legislature created the Regional Transit Authority (RTA) in 1979. NOPSI turned over the ownership, management and operation of the New Orleans transit system to the RTA on July 1, 1983.

The St. Charles Line was named to the National Register of Historic Places in 1973. In 1984, the line was declared a National Historic Mechanical Engineering Landmark. The St. Charles Streetcar Line is the oldest continuously operated street railway line in the world.

Equipment

The RTA owns 41 vintage streetcars. It uses 35 900-series Perley Thomas standard streetcars, built in 1923 and 1924, on the St. Charles Streetcar Line (31 streetcars operated in revenue service with 4 spares). The streetcars can seat 52 passengers.

The St. Charles line forms a 13.2 mile crescent from Carondelet at Canal Street in the Central Business District through the oldest section of uptown New Orleans, around the Riverbend to Carrollton at Claiborne Avenue. The streetcar passes dozens of antebellum mansions, historic monuments, Loyola and Tulane universities, the Audubon Zoological Gardens, shopping centers, restaurants and hotels. Over most of the line, the streetcar runs on the median. Stops are about every two blocks.
The St. Charles Streetcar does not turn around at the end of the line; the operator transfers control from one end of the car to the other.

The St. Charles line streetcars are maintained at the Carrollton facility. The facility was constructed in 1893 and was completely renovated in 1991.

Service

The RTA operates service on the St. Charles line 24 hours a day, 365 days a year. A one-way trip takes approximately 45 minutes; a round-trip takes one and one-half hours. The streetcars run at 3.5 minute headways during the a.m. and p.m. peaks, at 5 minute headways during the midday and at 12 minute headways during the night. The St. Charles Streetcar is available for special events and tours. The streetcar is chartered on a per-trip basis.

In 1990, the St. Charles Streetcar line operated 90,366 hours and 549,118 miles. It carries over 20,000 commuters and visitors daily.

Fare Structure

The one-way fare for the St. Charles Streetcar Line is $.80. A transfer ticket is $.10 and allows the passenger to ride connecting RTA lines without further charge. All passengers must get off at the end of the line.

The RTA sells a variety of transit passes, which allow unlimited passage on buses and streetcars within the RTA system.

Capital Projects

In 1988, the RTA embarked on a $47 million refurbishment of track, maintenance facility and streetcars, the first complete renovation of the St. Charles Streetcar system. The capital program included:

- $14.8 million - reconstruction of 13 miles of the track bed and installation of new rail, completed May 1990
- $500,000 - electrical system improvements, including replacement of trolley wire
- $10.5 million - renovation of the Carrollton Maintenance facility, including expansion of maintenance operations in the major repair and overhaul functions, completed January 1991
- $9 million - refurbishment of the entire fleet of 35 vintage Perley Thomas streetcars, including complete overhaul of mechanical systems, and body repair and painting, to be completed by 1995
- purchase of shop and maintenance of way equipment and tools

The Federal Transit Administration funded the project with a $35 million grant; $12 million in local matching funds were provided.

Operating and Maintenance Costs

In 1989, RTA's **total** operating and maintenance costs for streetcar service (the St. Charles Streetcar and the Riverfront Streetcar lines) was $3.4 million, as follows:

Vehicle Operations	$1,345,212
Vehicle Maintenance	$ 589,169
Non-Vehicle Maintenance	$ 74,923
General Administrative	$1,392,890

The RTA Board of Commissioners established a maximum allowable budget increase of five percent annually.

Revenues

The RTA Board of Commissioners adopted a policy requiring farebox recovery to be 45 percent of operating cost in 1989, 46 percent in 1990, and 47 percent in 1991.

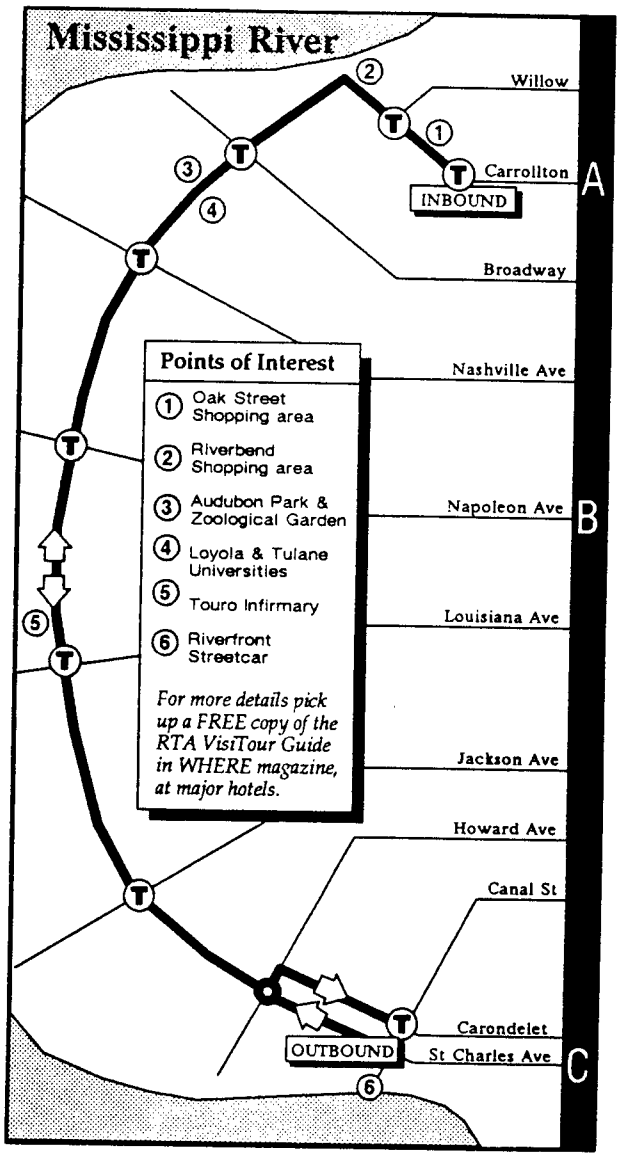
The RTA levies a one percent sales tax in the RTA service area. Eighty percent of Orleans sales tax revenues are used to cover operating expenses, the remaining 20 percent must be used for capital projects to ensure that transit equipment and infrastructure are maintained and updated.

Contact

Ronald Baptiste
Director of Accounting
New Orleans Regional Transit Authority
(504) 569-2663

12 St.Charles Streetcar

FARE – 80¢
Transfers additional 10¢
E&H FARE – 30¢
Transfers additional 2¢



RTA

RideLine 569–2700

Riverfront Streetcar
New Orleans, Louisiana

Institutional Arrangement

The Riverfront Streetcar line is owned and operated by the New Orleans Regional Transit Authority. The streetcar line is an integral part of the public transit network.

Background

Beginning in the 1930s, buses gradually replaced the streetcars in New Orleans, which had been operated since 1835. The Canal Street Line was shut down in 1964, and 11 cars were sold to various museums across the country.

In 1984, the "Bring Our Streetcars Home" Committee was formed to reclaim some of the cars sold in 1964. Three cars were bought and returned to New Orleans in 1985. Two have been renovated and are now in operation on the Riverfront Streetcar Line.

The Riverfront Transit Coalition was organized in 1984 to develop a streetcar line along the waters edge. After three years of building broad based public and private support, the project achieved total funding in 1987. The Riverfront Streetcar Line began operation on August 14, 1988, over New Orleans Public Belt Railroad (NOPB) linking the French Quarter with the area formerly occupied by the 1984 World's Fair.

Equipment

The RTA uses eight streetcars to provide service on the Riverfront Line. These include three 1923 Perley Thomas, three ex-Melbourne cars, a circa 1910 Naragansett, and a 1917 Brill semi-convertible. Seating capacity is 40; full capacity is 53.

The Riverfront Streetcar Line follows the Mississippi River on a 1.9 mile route from the Esplanade to Robin Street Wharf, with 12 stops along the way. The line does not in fact use any street trackage. The line operates over standard gauge rails of the New Orleans Public Belt Railroad, reserved for use by the streetcars. The line was severed at both ends from the NOPB mainline. The line was originally single track, with one passing track between St. Peter and Conti streets. In Phase III of the Riverfront Streetcar Project, the RTA constructed double track from Esplanade to Erato Street. The line links the congested Vieux Carre and the newly developed 19th-century warehouse district with steamship piers and the Canal Street busline, the transit route with the heaviest patronage in New Orleans.

The cars stop at bi-level platforms at regularly designated transit stops. The original New Orleans cars discharge passengers at the low platforms; the ex-Melbourne cars, which have a high level door and are accessible by mobility impaired persons, discharge passengers at the high platforms.

A pit and small storage yard, built at the foot of Canal Street, initially housed the Riverfront line cars at night. Some minor repairs were performed at the storage yard. Trucks and motors were moved on a specially constructed low-boy trailer to Carrollton shops. A new depot facility has recently been built at Napoleon Avenue.

Service

The RTA operates service on the Riverfront line from 6:00 a.m. to midnight Monday through Friday and from 8:00 a.m. to midnight on Saturday and Sunday. The streetcars run at 15 minute headways during the day and at 30 minute headways at night.

In 1990, the Riverfront Streetcar Line operated 21m197 hours and 128,805 miles. The line was originally projected to carry 2,000 passengers per day. Throughout 1988, daily patronage exceeded 3,000 and in 1989 patronage was between 4,000 and 5,000 per day.

Fare Structure

One-way fare on the Riverfront line is $1.00. Transfers are an additional $.10. Elderly and handicapped patrons ride for $.40.

The RTA sells a variety of transit passes, which allow unlimited passage on buses and streetcars within the RTA system.

Capital Projects

The Riverfront Transit Coalition raised over $100,000 from private sources for technical studies and project management to develop the Riverfront Streetcar Line. Capital funding included a $2.6 million grant from the Federal Transit Administration (FTA), a pledge of $1.3 million toward capital costs and a three-year operating subsidy by the RTA, grants from the Downtown Development District, the Audubon Park Commission, the New Orleans Convention Centre, and the French Market Commission, and other city agencies.

In 1989, the RTA and the Riverfront Transit Coalition began plans for Phase II and III of the Riverfront Project, including the following:

Phase II

- extension of track from Julia Street to Race Street
- construction of a maintenance facility and museum in an historic building at Napoleon Avenue
- purchase and renovation of three vintage streetcars (a 1923 Perley Thomas, a 1925 Melbourne W-2, and a Naragansett built in Brazil circa 1910)
- construction of three additional station stops at Julia, Calliope and Robin streets

Phase III

- construction of double tracks from Esplanade to Erato Street
- construction of multi-level station at Canal Street to service the Aquarium of the Americas

The $14.4 million Phase II and III of the Riverfront Project is being funded with $10.1 million from the Federal Transit Administration and $4.3 million local match from the Riverfront Transit Coalition Group, Inc. RTA is nearing completion of Phases II and II of the Riverfront Project.

Operating and Maintenance Costs

In 1989, RTA's **total** operating and maintenance costs for streetcar service (the St. Charles Streetcar and the Riverfront Streetcar lines) was $3.4 million, as follows:

Vehicle Operations	$1,345,212
Vehicle Maintenance	$ 589,169
Non-Vehicle Maintenance	$ 74,923
General Administrative	$1,392,890

The RTA Board of Commissioners established a maximum allowable budget increase of five percent annually.

Revenues

The RTA Board of Commissioners adopted a policy requiring farebox recovery to be 45 percent of operating cost in 1989, 46 percent in 1990, and 47 percent in 1991.

The RTA levies a one percent sales tax in the RTA service area. Eighty percent of Orleans sales tax revenues are used to cover operating expenses, the remaining 20 percent must be used for capital projects to ensure that transit equipment and infrastructure are maintained and updated.

Contact

Ronald Baptiste
Director of Accounting
New Orleans Regional Transit Authority
(504) 569-2663

2 Riverfront Streetcar

FARE – $1
Transfers additional 10¢
E&H FARE – 40¢
Transfers additional 2¢

10 INBOUND — Thalia St. (A)

9 Calliope St.
Historic Warehouse District
Louisiana Science Centre
New Orleans Exhibition Hall & Convention Center

8 Julia St.
Louisiana Childrens Museum
New Orleans Exhibition Hall & Convention Cntr
Riverwalk Marketplace

7 Poydras St.
New Orleans Hilton Riverside & Towers
Riverwalk Marketplace
Riverboat Cajun Queen
Paddlewheeler Creole Queen
International Cruise Terminal

6 Canal St. (T) (B)
Aquarium of the Americas
Canal Ferry Terminal
Canal Place Shopping Centre
Rivergate Exhibition Hall
Riverwalk Marketplace
St. Charles Streetcar via Canal Bus
Spanish Plaza
Sternwheel Cotton Blossom Zoo Cruise
World Trade Center
Westin Hotel

5 Bienville St.
Woldenburg Riverfront Park
Aquarium of the Americas

4 Toulouse St.
Jackson Square
St. Louis Cathedral
Cabildo, Presbytere, Pontalba Apartments
Jackson Brewery
Sternwheel Steamboat Natchez
Riverboat Bayou Jean Lafitte
Woldenburg Riverfront Park

3 Dumaine St.
French Market
Decatur Street Merchants

2 Ursulines St.
French Market
Farmers' Market
Flea Market
Decatur St. Merchants

1 OUTBOUND — Esplanade Ave. (C)
Old U.S. Mint/LA State Museum
Faubourg Marigny Historic District

Mississippi River

RTA

RideLine 569–2700

Portland, Oregon

Vintage Trolley
Portland, Oregon

Institutional Arrangement

The vintage trolleys are owned and operated by the Tri-County Metropolitan Transportation District of Oregon (Tri-Met) under a contractual arrangement with Vintage Trolley Inc. (VTI), a private non-profit organization. VTI reimburses Tri-Met for operating and maintenance costs.

Background

A group of interested citizens introduced the idea of vintage trolley service to add a nostalgic touch to the planned Banfield light rail transit system. The vintage trolley project became part of the Banfield LRT Project during its construction. The LRT line opened in 1986. Tri-Met deferred development and implementation of the vintage trolley until the LRT line was up and running. In 1987, Tri-Met started the vintage trolley project which involved purchase of trolley cars, construction of a small maintenance facility, and minor track and signal modifications to the LRT line.

Tri-Met began operating vintage trolley service on December 1, 1991. During December, the service was during weekday peaks as well as weekends and holidays. Beginning in January 1992, the service was operated on its regular schedule of weekends, holidays and for special events.

Equipment

The vintage trolley service operates over a 1.5 mile downtown segment of the 15 mile Banfield LRT line, which opened in 1986. The vintage trolley service augments LRT headways on the inner portion of the line.

Tri-Met purchased four vintage replica trolleys from Gomaco. Two have been received and are currently being operated. The other two are being constructed. Tri-Met expects that normal operation will be with 3 cars scheduledand one spare.

Gomaco designed the cars to look like streetcars which were operated in Portland in 1912. The cars use PCC trucks from Chicago and Boston which have been completely rebuilt. Tri-Met decided to use replica cars rather than restore vintage cars because they felt the replicas would be more reliable. Reliability is critical since the service is operated between LRT service.

All LRT stations have wayside lifts and vehicles are accessible to disabled persons. The vintage trolley cars were designed to be historically accurate and did not include wheelchair accessibility. However, disabled persons can use the station lifts to board the vintage trolley cars in the rear vestibule, where one wheelchair tie-down is available.

Service

The service operates on weekends and holidays from 10 a.m. to 6 p.m. at about 15 minute headways. Service will be extended for special events. Charter service is also available.

During the first month, December 1991, Tri-Met operated the vintage trolley service daily. Approximately 20,000 passengers rode the trolleys during December.

Normal operations of weekends and holidays was put into effect in January 1992. When the third car is put into regular service, vehicle hours will be approximately 24 per day (8 per car) and vehicle miles will be approximately 135 per day (45 per car).

Fare Structure

The vintage trolley fare is $1.00. MAX fares on the same tracks are $.90 for the Lloyd Center - SW 11th Avenue trip. Rides on MAX are free among the seven station in the heart of downtown.

The fare system for the vintage trolley is separate from the LRT system; LRT passes are not good on the vintage trolley service.

Capital Projects

The vintage trolley project involved three components:

- acquisition of four vintage trolley replicas manufactured by Gomaco ($450,000 to $500,000 each)
- construction of a small maintenance facility adjacent to the LRT line ($1,000,000)
- minor track and signal modifications to 1.5 mile section of the Banfield LRT line over which the service is operated

The project was funded as part of the Banfield LRT Project. VTI, along with the FTA, provided some funding for the car purchases, carbarn construction and other capital costs.

Operating and Maintenance Costs	Tri-Met operates and maintains the vintage trolley service. Tri-Met LRT operators operate the trolleys. Tri-Met will charge VTI approximately $100,000 per year, based on a 3 car weekend operation. In addition, VTI has general and administrative costs budgeted at $165,000 for the first year.
Revenues	Vintage Trolley Inc. receives the revenues from the vintage trolley operation. It also sells advertising and solicits corporate contributions. Under the contractual arrangement, Vintage Trolley Inc. reimburses Tri-Met for the operating and maintenance costs associated with the vintage trolley operation. VTI derives funds from a Local Improvement District which collects self-imposed taxes on properties adjacent to trolley operation. VTI sells car and station sponsorship to local businesses and sells trolley souvenirs.
Labor	Tri-Met operators operate the trolleys. VTI provides conductors for the trolleys, mostly volunteers.
Future Plans	The City of Portland is interested in a larger vintage trolley network and has hired a consultant to conduct a study to expand vintage trolley service throughout downtown Portland.
Contact	Dennis Porter Systems Engineering Director Tri-County Metropolitan Transportation District of Oregon (503) 273-4356

Portland, Oregon

Vintage Trolley
Portland, Oregon

Institutional Arrangement

The vintage trolleys are owned and operated by the Tri-County Metropolitan Transportation District of Oregon (Tri-Met) under a contractual arrangement with Vintage Trolley Inc. (VTI), a private non-profit organization. VTI reimburses Tri-Met for operating and maintenance costs.

Background

A group of interested citizens introduced the idea of vintage trolley service to add a nostalgic touch to the planned Banfield light rail transit system. The vintage trolley project became part of the Banfield LRT Project during its construction. The LRT line opened in 1986. Tri-Met deferred development and implementation of the vintage trolley until the LRT line was up and running. In 1987, Tri-Met started the vintage trolley project which involved purchase of trolley cars, construction of a small maintenance facility, and minor track and signal modifications to the LRT line.

Tri-Met began operating vintage trolley service on December 1, 1991. During December, the service was during weekday peaks as well as weekends and holidays. Beginning in January 1992, the service was operated on its regular schedule of weekends, holidays and for special events.

Equipment

The vintage trolley service operates over a 1.5 mile downtown segment of the 15 mile Banfield LRT line, which opened in 1986. The vintage trolley service augments LRT headways on the inner portion of the line.

Tri-Met purchased four vintage replica trolleys from Gomaco. Two have been received and are currently being operated. The other two are being constructed. Tri-Met expects that normal operation will be with 3 cars scheduledand one spare.

Gomaco designed the cars to look like streetcars which were operated in Portland in 1912. The cars use PCC trucks from Chicago and Boston which have been completely rebuilt. Tri-Met decided to use replica cars rather than restore vintage cars because they felt the replicas would be more reliable. Reliability is critical since the service is operated between LRT service.

All LRT stations have wayside lifts and vehicles are accessible to disabled persons. The vintage trolley cars were designed to be historically accurate and did not include wheelchair accessibility. However, disabled persons can use the station lifts to board the vintage trolley cars in the rear vestibule, where one wheelchair tie-down is available.

Service

The service operates on weekends and holidays from 10 a.m. to 6 p.m. at about 15 minute headways. Service will be extended for special events. Charter service is also available.

During the first month, December 1991, Tri-Met operated the vintage trolley service daily. Approximately 20,000 passengers rode the trolleys during December.

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Fare Structure

The vintage trolley fare is $1.00. MAX fares on the same tracks are $.90 for the Lloyd Center - SW 11th Avenue trip. Rides on MAX are free among the seven station in the heart of downtown.

The fare system for the vintage trolley is separate from the LRT system; LRT passes are not good on the vintage trolley service.

Capital Projects

The vintage trolley project involved three components:

- acquisition of four vintage trolley replicas manufactured by Gomaco ($450,000 to $500,000 each)
- construction of a small maintenance facility adjacent to the LRT line ($1,000,000)
- minor track and signal modifications to 1.5 mile section of the Banfield LRT line over which the service is operated

The project was funded as part of the Banfield LRT Project. VTI, along with the FTA, provided some funding for the car purchases, carbarn construction and other capital costs.

Operating and Maintenance Costs

Tri-Met operates and maintains the vintage trolley service. Tri-Met LRT operators operate the trolleys. Tri-Met will charge VTI approximately $100,000 per year, based on a 3 car weekend operation. In addition, VTI has general and administrative costs budgeted at $165,000 for the first year.

Revenues

Vintage Trolley Inc. receives the revenues from the vintage trolley operation. It also sells advertising and solicits corporate contributions. Under the contractual arrangement, Vintage Trolley Inc. reimburses Tri-Met for the operating and maintenance costs associated with the vintage trolley operation.

VTI derives funds from a Local Improvement District which collects self-imposed taxes on properties adjacent to trolley operation. VTI sells car and station sponsorship to local businesses and sells trolley souvenirs.

Labor

Tri-Met operators operate the trolleys. VTI provides conductors for the trolleys, mostly volunteers.

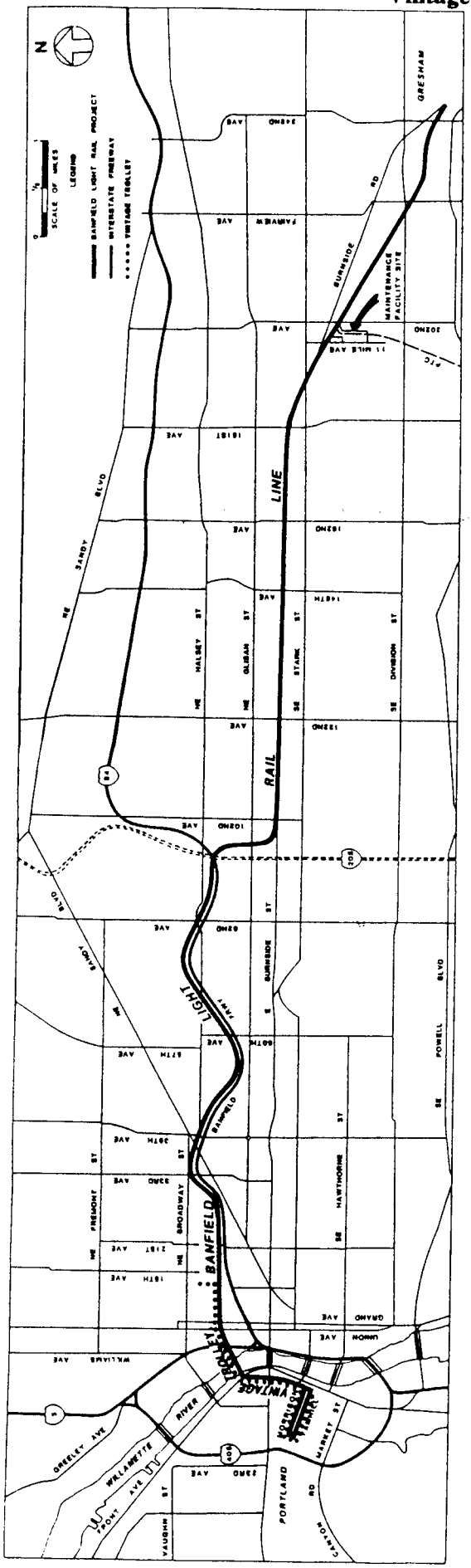
Future Plans

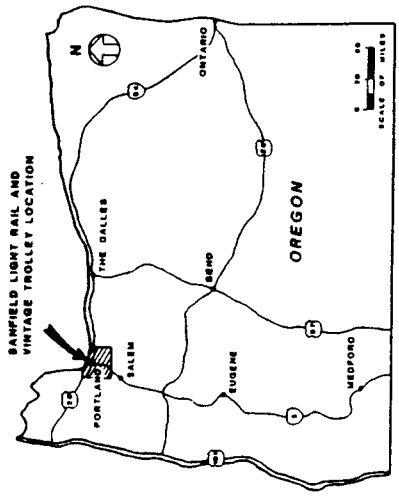
The City of Portland is interested in a larger vintage trolley network and has hired a consultant to conduct a study to expand vintage trolley service throughout downtown Portland.

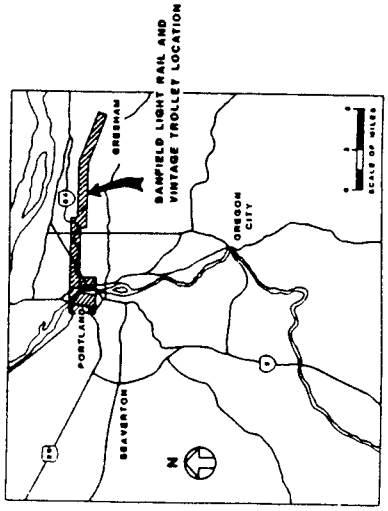
Contact

Dennis Porter
Systems Engineering Director
Tri-County Metropolitan Transportation District of Oregon
(503) 273-4356

Vintage Trolley







San Jose, California

Vintage Trolleys
San Jose, California

Institutional Arrangement

The San Jose Trolley Corporation was formed in 1982 for the purpose of restoring vintage trolley cars. The San Jose Trolley Corporation leases six restored vintage trolleys to the Santa Clara County Transit District (District) which operates the vintage trolley service over its LRT track on the San Jose Transit Mall. The District is responsible for all aspects of administration, operation and maintenance of the system. The District cannot, however, change the appearance of the vintage trolleys in any way.

Background

Electric streetcar service was initiated in San Jose on February 20, 1891. By 1915, there were 126 miles of trolley wire in the Santa Clara Valley. Two systems were operated over shared tracks: 1) the Peninsular Railway ran to Palo Alto, Congress Springs, Los Gatos, Saratoga, Campbell and Alum Rock Park, and 2) the San Jose Railroad operated primarily within the city limits of San Jose with a northern extension to the City of Santa Clara. The Peninsular Railway abandoned all service in October 1934 and conveyed 12 miles of track in city streets to the San Jose Railroad. The San Jose Railroad continued to operate until April 1938. The rails in the streets were subsequently paved over and the car bodies were stripped and sold.

Planning for the Guadalupe corridor LRT raised the interest of a few rail enthusiasts who recalled the vintage cars that operated downtown in the early 20th century. They expressed an interest in finding and restoring old trolleys. However, while several trolleys were located, little progress was made until 1982 when the San Jose Trolley Corporation was formed for the purpose of restoring vintage trolley cars.

One of the San Jose Trolley Corporation's first projects was to build a trolley barn in Kelley Park. Pacific Gas & Electric, along with several building contractors, donated materials and labor to construct the building. The Trolley Corporation hired a "Master Car Builder" and began restoration of several vintage trolley cars, with volunteer labor. The trolley cars took about three years each to restore.

Vintage cars operated in revenue service come under the California Public Utilities Commission and are subject to the same rules as the light rail cars. District personnel at the Light Rail Maintenance Facility have thoroughly checked and tested the restored cars to ensure that each is ready for revenue service.

The Transit Mall was opened for LRT service on June 17, 1988 and the vintage cars went into service on November 18, 1988.

Equipment

The District operates vintage trolleys over 4.5 miles of downtown LRT track. The vintage trolleys provide alternate local service from the Civic Center to the down town Transit Mall which covers 14 blocks along First and Second Streets between San Carlos and Saint James. The mall provides centralized boarding and transfers for the County's buses and light rail vehicles. The vintage trolleys and LRT vehicles use the same stations and connect with various bus routes in the downtown area.

The District provides the service with six vintage trolley cars leased from the San Jose Trolley Corporation. These include four early California type cars that originally served the local area and two international cars:

- **Car #1** was built by the Sacramento Electric, Gas, and Railway Company and ran in Sacramento from 1903 to 1906. It was sold to the Union Traction Company in Santa Cruz and operated from 1906 through 1923. It was used as living quarters for a while and was eventually donated to the San Jose Trolley Corporation. The car was restored to its original configuration and returned to service in San Jose on August 3, 1990.

- **Car #73** was built by the Jewett Car Company in Newark, Ohio and ran in San Jose for the San Jose Railroad from 1913 to 1934. It was then sold and used for housing. After restoration, it was returned to service in San Jose on May 12, 1989.

- **Car #124** was built by the American Car Company in St. Louis, Missouri and operated by the San Jose Railroad from 1912 to 1934. It was then sold for housing. Car #124 was restored and returned to service in San Jose on November 18, 1988.

- **Car #129** was built by the American Car Company and operated by Sacramento Gas and Electric from 1913 to 1948. It was used as a storage shed for many years and then acquired by Charles Smallwood and leased to the San Jose Trolley Corporation. It returned to service in San Jose on November 18, 1988.

- **Car #531** was built in 1928 by the Melbourne and Metropolitan Tramways Board (M&MTB). It ran on the Melbourne trolley system from 1928 to the mid-1980s. San Jose Trolley Corporation bought the trolley in 1986, restored it, and put it into service on January 26, 1990.

- **Car #2001** was built in 1929. It was purchased from Milan, Italy, and is being rebuilt by San Jose Trolley Corporation. When completed, it will be put into special charter service.

Service

Vintage trolleys operate from 9 a.m. to 3:30 p.m. on weekdays and from 11 a.m. to 6 p.m. on weekends and holidays, weather permitting. Trolleys run every 20 minutes between the Civic Center Station and downtown. Vintage cars are scheduled to follow right after LRT vehicles whenever possible.

The vintage trolley service is most heavily utilized between 11:30 a.m. and 1:30 p.m., during the lunch hour. The largest share of the riders are locals.

During inclement weather, patronage on the vintage trolleys drop. Four of the trolleys are California Cars with open ends. These cars are kept inside during the rainy season. Car #531 is totally enclosed and is usually operated during the rainy season.

In 1991, the vintage trolleys operated 4,480 hours (approximately 22,400 miles) and carried 143,322 passengers.

Fare Structure

Regular vintage trolley fares are $.50; disabled passengers pay $.25. Tickets have a two-hour time limit. Valid District bus and light rail passes are good on the vintage trolleys, but trolley tickets are not valid for travel on the LRT or buses.

Capital Projects

The Transit Mall was built by the City of San Jose. The $38.6 million project was funded by the Federal Transit Administration ($27.3 million) and the City of San Jose and the District ($11.3 million).

The initial cost to the San Jose Trolley Corporation for construction of the maintenance and storage facility and restoration of six vintage trolleys was $1.9 million. The Trolley Corporation estimates that the cost for materials and parts needed to equip a vintage car body is approximately $200,000. The cars were restored primarily with volunteer labor. Many local businesses contributed generous amounts to restore the vehicles.

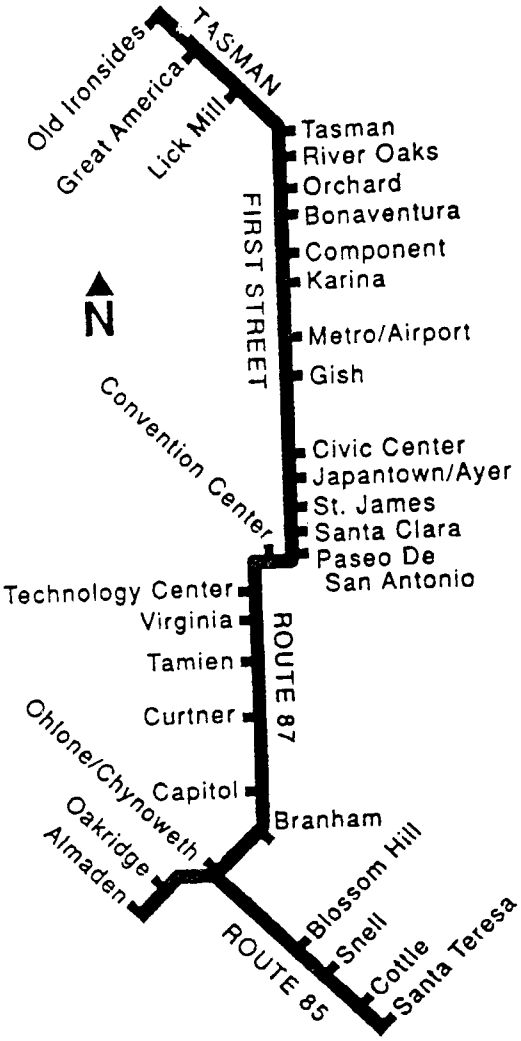
Operating and Maintenance Costs

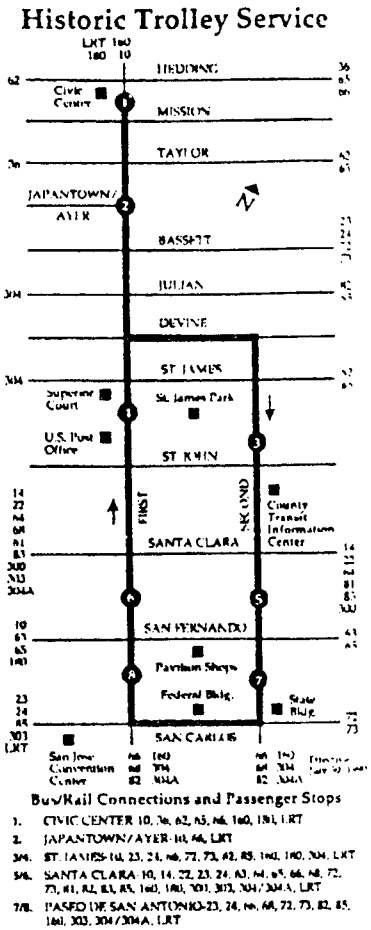
The District leases the trolley cars from the San Jose Trolley Corporation for $1 per year. The District is responsible for all operations and maintenance. Total 1991 operating and maintenance costs for the vintage trolley system were $641,500. This included:

Salaries and Benefits	
Operators (6)	$275,000
Manager/Supervisor (1)	$ 80,000
Elector-Mechanics (2)	$100,000
Administration Support and Overhead	$115,000
Total Salaries and Benefits	$570,000
Insurance	$ 16,000
Traction Power	$ 21,000
Vehicle Parts	$ 20,000
Tools and Equipment	$ 4,000
Vehicle Delivery	$ 2,500
Miscellaneous	$ 8,000
Total	$641,500

Contact

Malcolm R. Gaddis
Manager, Historic Trolleys
Santa Clara County Transit District
(408) 299-8627


TASMAN
Old Ironsides
Great America
Lick Mill
Tasman
River Oaks
Orchard
Bonaventura
Component
Karina
Metro/Airport
Gish
FIRST STREET
N
Convention Center
Civic Center
Japantown/Ayer
St. James
Santa Clara
Paseo De San Antonio
Technology Center
Virginia
Tamien
Curtner
Capitol
ROUTE 87
Ohlone/Chynoweth
Oakridge
Almaden
Branham
Blossom Hill
Snell
Cottle
Santa Teresa
ROUTE 85


Historic Trolley Service
LRT 180 10
HEDDING
Civic Center
MISSION
TAYLOR
JAPANTOWN/ AYER
N
BASSETT
JULIAN
DEVINE
ST JAMES
Superior Court
St. James Park
U.S. Post Office
ST JOHN
FIRST
SECOND
County Transit Information Center
SANTA CLARA
SAN FERNANDO
Pavilion Shops
Federal Bldg.
State Bldg.
SAN CARLOS
San Jose Convention Center
Bus/Rail Connections and Passenger Stops
1. CIVIC CENTER 10, 36, 62, 65, 66, 160, 180, LRT
2. JAPANTOWN/AYER-10, 66, LRT
3/4. ST. JAMES-10, 23, 24, 66, 72, 73, 82, 85, 160, 180, 304, LRT
5/6. SANTA CLARA-10, 14, 22, 23, 24, 63, 64, 65, 66, 68, 72, 73, 81, 82, 83, 85, 160, 180, 303, 303, 304/304A, LRT
7/8. PASEO DE SAN ANTONIO-23, 24, 66, 68, 72, 73, 82, 85, 160, 303, 304/304A, LRT

848

Waterfront Streetcar
Seattle, Washington

Institutional Arrangements

The Seattle Waterfront Streetcar is owned and operated by Seattle Metro. The historic trolley service is an integral part of Seattle Metro's public transit service, which includes bus and monorail service.

Background

In 1974, a local business man approached George Benson, a member of the City Council and the Seattle Metro Council, with an idea to establish historic trolley service along the waterfront, in order to attract tourists to the area and to move them from one end of the waterfront area to the other. Mr. Benson pursued the idea, first going to Burlington Northern to obtain permission to operate service over its existing switching track. Burlington Northern agreed. Mr. Benson then obtained agreement from each pier owner not to use the spur tracks. Mr. Benson traveled to Melbourne, Australia in 1978 to select two cars for the service. After eight and one-half years, the service was initiated on Memorial Day in 1982.

The service has been a huge success in Seattle. In 1990, the line was extended down Main street to 5th Avenue. This extension of the trolley track from the waterfront to the Metro bus tunnel in the International District has made the streetcars a vital link in the City's transportation network. From the transit tunnel, all of Seattle and King County are within easy reach.

Equipment

Metro currently owns five vintage (circa 1927) Australian streetcars and uses two in service. The cars were still in service when City Council-member George Benson arranged for them to be brought from Melbourne, Australia. Metro restored the cars, including adding lifts, wheelchair tie-downs and sliding pocket doors to keep the cars comfortable in any weather. The cars can accommodate 52 seated and 40 standing passengers.

Service was initiated on Memorial Day, 1982. The service originally operated over 1.6 miles of existing, switching single track owned by Burlington Northern along historic Alaskan Way on Seattle's waterfront. Approximately one-half mile runs alongside the Burlington mainline. The track was cut off from the mainline. In 1990 0.4 mile of new track was laid, extending the line from Main Street to South Jackson Street. The Washington Street Station opened on May 19, 1990 and the Main Street extension opened on June 23, 1990.

The line currently runs from Broad (Pier 70) to Main Street, along Alaskan Way, with stops at Broad, Vine, Bell, Pike, University, Madison and Washington, and along Main Street with stops at Occidental Park and 5th and Jackson.

Streetcars and stations are accessible for disabled passengers.

Service

Seattle Metro operates the Waterfront streetcar service 365 days a year. On weekdays service is operated from 7 am to 6:25 pm; on Saturdays, Sundays and Holidays, service is operated between 8:30 am and 11 pm.

Service is operated at 30 minute headways on weekends and holidays and at 20 to 30 minute headways during the week.

In 1989, the Waterfront Streetcar carried 198,300 passengers and provided 30,800 vehicle miles of service.

Fare Structure

The trolley fare is $.75 on weekends and off-peak hours and $1.00 during peak hour trips. The fare entitles the rider to unlimited riding on the streetcar and regular Metro bus service for 90 minutes. Valid Metro passes, permits and transfers are also accepted. **Capital Projects**

The initial cost to implement the service was $4.2 million. This included:

- acquisition of two vintage 1927 trolleys from Melbourne, Australia
- alteration of cars to close off side and install 2 wheelchair tie-downs
- construction of a car barn with pit track and storage for five cars
- track repairs

The initial $4.2 million was funded $2 million by the City, $1 million by the FTA, and $1.2 million by local businessmen along the waterfront.

Burlington Northern installed four gated crossings at the northern end of the line. This was funded jointly by the Federal Safety and Burlington Northern.

In 1990, an additional .4 miles of track was laid to extend the line to Jackson Street, for $6 million.

Operating and Maintenance Costs

In 1989, operating costs were $579,600, allocated as follows:

vehicle operations	$151,276
vehicle maintenance	$150,116
non-vehicle maintenance	$177,358
General Administrative	$100,850

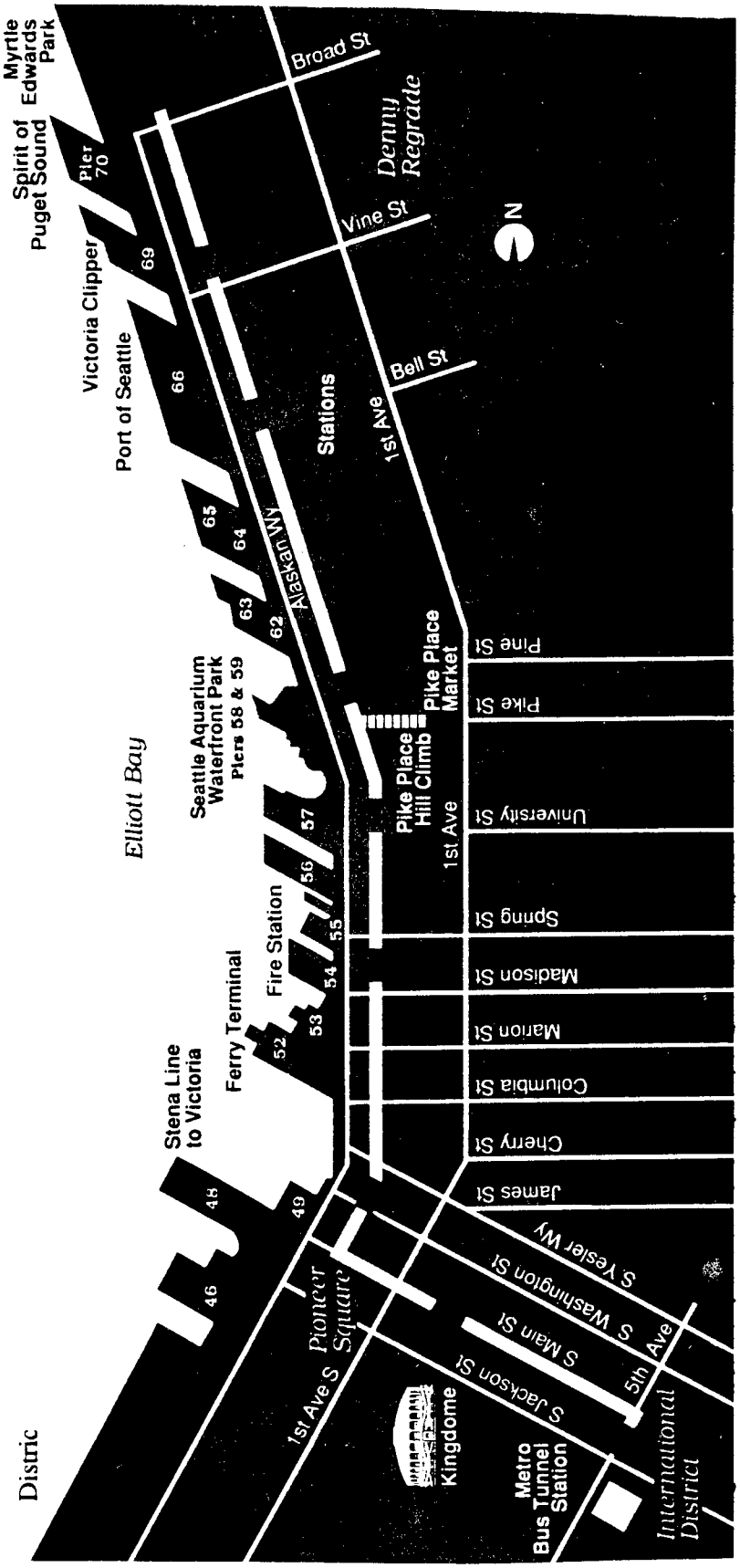
Future Plans

Local businessmen and residents have begun lobbying Mr. Benson to extend the line approximately one-half mile to the Seattle Center, which includes the Coliseum and Opera House and is served by the Seattle Monorail. This extension would provide for a complete loop between the trolley, the monorail and the bus service.

Contact

George Benson
Councilmember
Seattle City Council
(206) 684-1014

Waterfront Streetcar



Trolley Line

Tucson, AZ

Old Pueblo Trolley, Inc.
Tucson, Arizona

Institutional Arrangement

Old Pueblo Trolley, Inc. was established in 1983 to restore historic trolley operation within the city of Tucson. OPT is a volunteer, community based, not-for-profit corporation. It received tax exempt charitable status, 501(c)(3), in May 1983. OPT is nearing completion of Phase I of the trolley project and expects to begin operation in 1992. OPT volunteers will operate the trolleys.

Background

The Tucson Street Railway operated electric streetcar service in Tucson from 1906 until December 31, 1930. Interest in restoring historic trolley service in Tucson was sparked in January 1983 as part of the University of Arizona's 1985 Centennial celebration planning. About one dozen interested persons organized themselves as "Bring Back The Trolley" and prepared an initial feasibility study which showed the trolley was possible.

On May 9, 1983, Old Pueblo Trolley, Inc. was organized as a non-profit corporation under State of Arizona statutes. In the summer of 1983, the City of Tucson and the State of Arizona became interested in the project and agreed to fund a formal feasibility study. Wilbur Smith Associates completed the feasibility study in February 1984 which verified the feasibility of a trolley system. The study concluded that the trolley would fulfill the functional purposes defined for the project:

1) act as a stimulus to Tucson's economy by providing a significant tourist attraction

2) aid in the redevelopment of downtown, the historic Fourth Avenue business district, and the adjoining historic residential neighborhoods

3) provide public transportation for local residents between downtown and the University of Arizona.

The study recommended an 18-hour daily operation using four trolleys with ten minute headways running between the downtown Tucson Convention Center and the University of Arizona.

A $4.5 million bond issue to finance the trolley system through downtown, north on Fourth Avenue to University Boulevard and on to the University was placed on the May 22, 1984 ballot. The trolley revenue bond issue failed to win voter approval by a narrow margin.

Old Pueblo Trolley voted at its 1984 annual meeting to continue with the effort to bring back the trolley, in spite of the failed bond issue. A reduced scale of operation was planned. Phase I provided a more limited route between the University and the Fourth Avenue Arts and Business District and would be accomplished with cash and material donations and voluntary labor.

OPT leased a building at Fourth Avenue and Eighth Street for one dollar a year, to serve as a work area. In March 1985, OPT signed a ten-year lease with the Orange Empire Railway Museum for an historic streetcar, a 1919 Birney Safety Car. "Ground breaking" ceremony was held on March 12, 1985, when a chunk of asphalt was lifted off the old trolley rail.

On September 9, 1985, the City of Tucson Mayor and Council granted OPT an exclusive trolley franchise, approving construction and operation of the trolley from the Trolley Barn at Fourth Avenue and Eighth Street to the main gates of the University of Arizona.

A street improvement project on University Boulevard during April 1986 exposed original trolley tracks and passing switches. OPT volunteer crews completed rejuvenation of the track by January 1987. Construction began December 19, 1987 on an additional 2800 feet of new track, which will connect the present trolley restoration site (Fourth Avenue and Eighth Street) with the original trackage, using track salvaged from other Tucson street improvements.

In June 1990, the Arizona Legislature passed into law a $500,000 light rail demonstration grant, administered by the City, to provide OPT with the funds necessary to purchase the materials required to complete the trolley construction. Operation is anticipated in the spring or summer of 1992.

Equipment

The OPT is leasing a single-truck 1919 Birney Safety Car (Pacific Electric #332) from the Orange Electric Railway Museum. The car operated over the Red Car Line between Los Angeles and Pasadena in the 1920's and 1930's. The car was sold to MGM studios in 1939 and starred in several films. The car was later sold to the museum. OPT's 10 year lease on the car expires in 1995. OPT volunteers have restored the car to its original look and repainted it Tucson No. 10. The car is identical to the last trolley operated in Tucson on December 31, 1930.

The route will be slightly over one mile, including 2800 feet of reclaimed trackage along University Avenue from Park Avenue to Herbert Avenue and 2800 of newly constructed track along Fourth Avenue from University Avenue to Eighth Street.

Service

OPT anticipates that the trolley service will initially serve a tourist function and will be operated on weekends, Friday nights and weekdays during the noon hour.

Fare Structure

OPT anticipates that the fare will be the same as the City bus service: $.60 one way and $1.20 round trip.

Capital Projects

The trolley project has been accomplished largely with volunteer labor and donations of cash and materials. OPT has raised over $100,000 in private donations. For example, General Electric rebuilt the trolley's motors and Phelps-Dodge Corporation provided a significant donation of electrical equipment useful for the overhead power supply. O'Malley Properties leased OPT its East Eighth Street trolley barn for $1 per year.

A $500,000 state grant was awarded in 1990 to provide materials to complete track construction and overhead power lines.

OPT has a contract with ABC Rail of Chicago to fabricate approximately $40,000 of special trackwork necessary to complete the initial phase of track construction. Additional contracts for overhead wire and fixtures, 110 poles and foundations, larger electrical power plan and trolley spare parts will cost approximately $150,000 to $200,000.

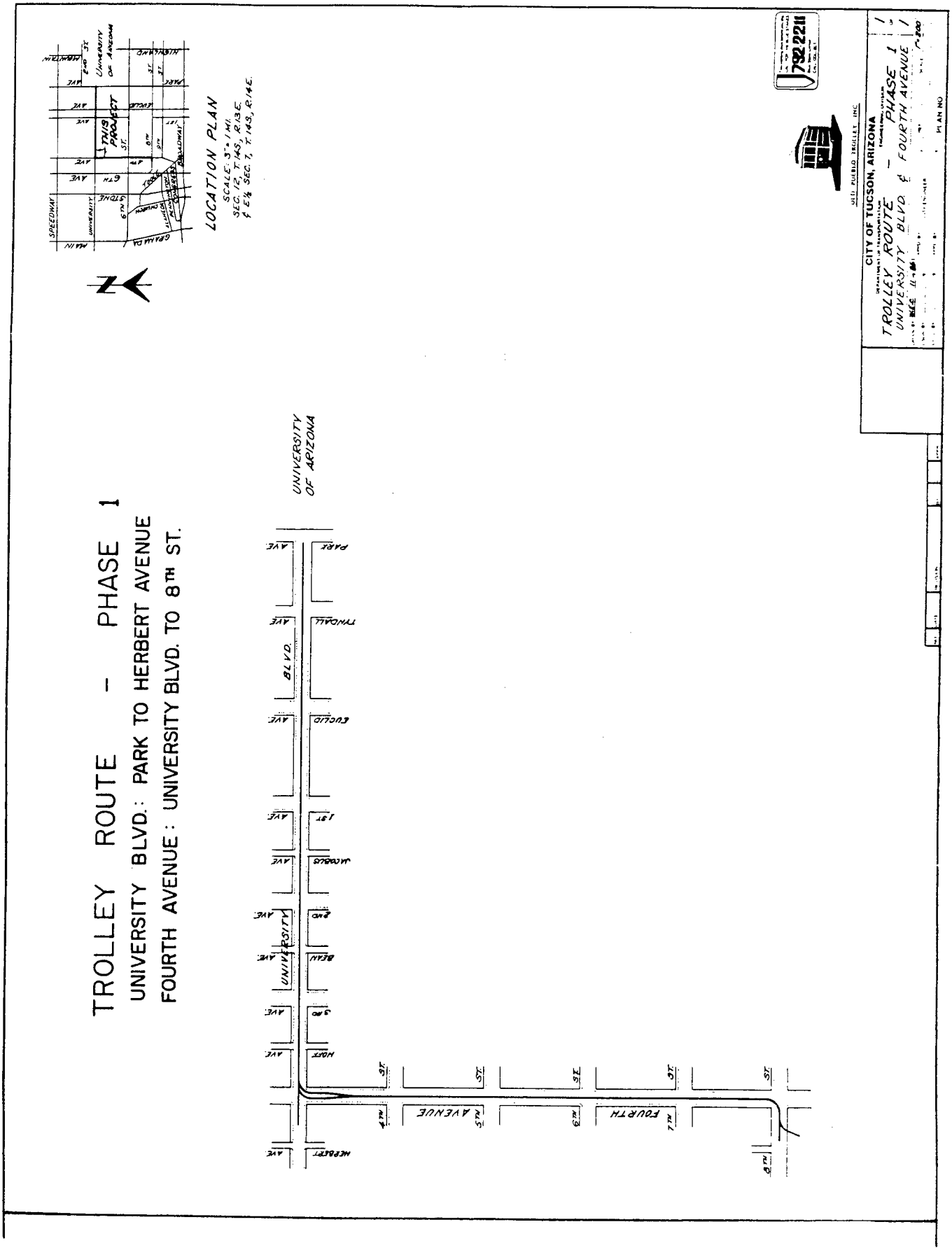
Future Plans

OPT remains committed to its original plan. Phase II will extend the trolley to Old Main on the University of Arizona campus, and from Fourth Avenue through downtown and the developing Arts District to the Tucson Convention Center. The South Scott Street Master Plan includes historic trolley operation. The five year Master Plan of the University of Arizona contemplates historic trolley service in front of Centennial Hall and around Old Main.

Contact

Richard G. Guthrie
Vice President
Old Pueblo Trolley, Inc.
(602) 791-4259

Old Pueblo Trolley



Memphis, TN

Main Street Trolley
Memphis Area Transit Authority

Institutional Arrangement

The Memphis Area Transit Authority, the local public transit agency, owns and will operate the vintage trolley service.

Background

MATA is currently constructing the track and restoring the vintage trolley cars. The construction is 30 percent complete; MATA anticipates initiation of service in November 1992.

Equipment

The route will consist of 2.5 miles of newly constructed double track (5 miles total track) and will run downtown along Main Street with the Pyramid Arena at the northern terminus and the Civil Rights Museum as the Southern Terminus. The project includes redoing a pedestrian mall into a pedestrian/transit mall along a portion of the route. The trolley will stop about every other block. Stations will be equipped with lifts for wheelchair access.

MATA has acquired 10 vintage trolleys which will be restored and used in service along the route. These include:

- two Melbourne cars
- six single truck Brill cars, previously operated in Portugal
- two double truck Brill cars, previously operated in Portugal

Six of the trolleys will be used in regular service to maintain 3.5 minute headways.

Service

The service will run from 6 a.m. to midnight during the week; it will most likely begin service a little later on the weekends. MATA anticipates running the vintage trolleys at 3 to 5 minute headways in the morning and afternoon peaks and during the noon hour; headways at other times will be 10 minutes. The trolleys will also be available for special charter service.

Fare Structure

The fare structure for the service has not been formalized to date. MATA anticipates a $.50 fare with greatly discounted passes for regular downtown users.

Capital Projects

The vintage trolley project cost is $33 million. This includes:

- reconstruction of the pedestrian mall into a pedestrian/transit mall, including construction of track
- construction of track beyond the mall
- purchase and restoration of 10 vintage trolley cars
- renovation of a donated building into a carbarn and maintenance facility

The project is being funded with Federal Interstate Transfer Funds ($25.5 million), State funds ($2.5 million), local funds ($2.5 million), and private sector contributions ($3.0 million).

The City of Memphis donated the building for the maintenance facility. The contribution of the building, valued at $530,000, is not included in the $2.5 million City's share of the project. The $3.0 million raised from the private sector is being used to purchase and restore the vintage trolleys at an average cost of $300,000 per trolley.

Future Plans

MATA is also planning to renovate the train station as a multi-modal transit station which will tie AMTRAK and MATA bus and vintage trolley service. The train station is adjacent to the Civil Rights Museum which anchors the southern end of the vintage trolley system.

Contact

Randall J. Hume
Director of Service Development and Administration
Memphis Area Transit Authority
(901) 722-7116

APPENDIX B

DESCRIPTIONS OF DOWNTOWN BUS CIRCULATOR SYSTEMS

Dallas, TX

Hop A Bus
Dallas Area Rapid Transit

Institutional Arrangement

The Dallas Area Rapid Transit (DART) operates Hop A Bus service in downtown Dallas.

Equipment

Hop A Bus consists of three high-frequency circulating downtown routes, covering 11.1 miles.

DART uses 8 (with 2 spare) 1986 Neoplan 440 buses to operate the Hop A Bus service.

Service

Hop A Bus service operates Monday through Friday. The three routes operate on different schedules as follows:

- green route — 10 a.m. to 3:50 p.m. with 10 minute headways
- red route — 6:30 a.m. to 6:30 p.m. with 5 to 12 minute headways
- blue route — 6:30 a.m. to 6:30 p.m. with 11 to 12 minute headways

DART operated 207,104 vehicle miles in 1991, carrying 377,866 passengers on the Hop A Bus routes.

Fare Structure

The fare for Hop A Bus is $.25 per trip. Transfers to Hop A Bus are free from local DART routes, Express routes, and between Hop A Bus routes. An upgrade charge of $.50 for Local service and $1.50 for Express service is required when transferring *from* Hop A Bus.

Commuters parking in the Reunion Arena Park & Ride Lot E can park all day for $1.50 and ride free to and from downtown on Hop A Bus.

Operating and Maintenance Costs

Actual FY 1991 operating cost was $492,728, including $230,328 for operations and $262,400 for maintenance.

Revenues

Fare revenue in 1991 was $94,500.

Contact

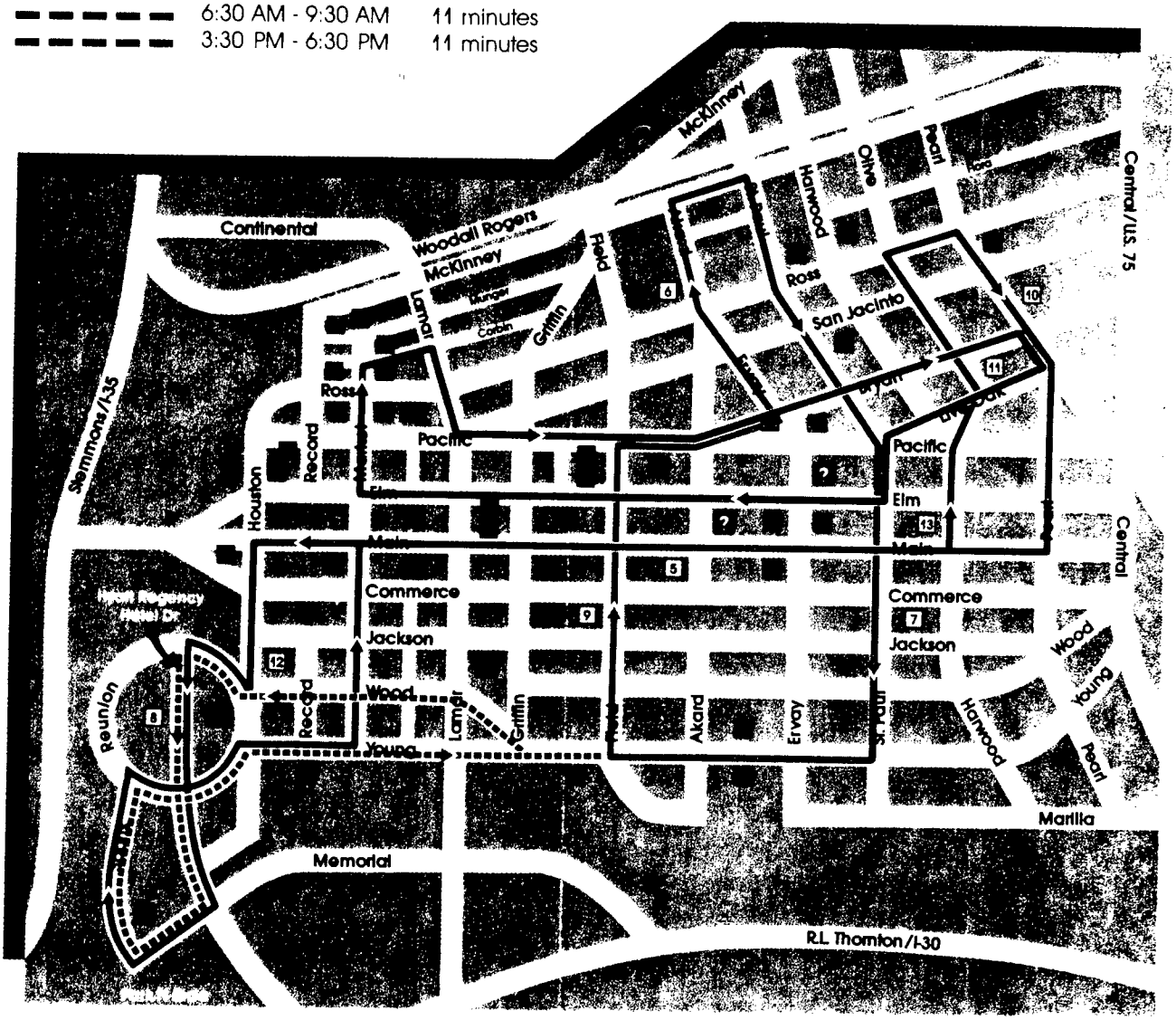
Janice Napper
Dallas Area Rapid Transit
(214) 658-6720

Hop A Bus

	Schedule	Every
Green Route	10:00 AM - 3:50 PM	10 minutes
Red Route	6:30 AM - 6:30 PM	5-12 minutes
Blue Route	6:30 AM - 6:30 PM	11-12 minutes
	6:30 AM - 9:30 AM	11 minutes
	3:30 PM - 6:30 PM	11 minutes

DART Customer Assistance Center

NORTH



Denver, CO

16th Street Mall
Denver Regional Transit District

Institutional Arrangement

The Regional Transit District (RTD) constructed and operates shuttle service along the 16th Street Mall in downtown Denver.

Background

RTD constructed the 16th Street Mall to improve circulation in downtown Denver and provide more efficient transit service for downtown commuters. The Mall diverts bus traffic from the Central Business District to two transit facilities -- the Market Street Station, located at 16th and Market, and the Civic Center Station, located at Broadway and Colfax. The Mall consists of:

- a mile-long transit/pedestrian way spanning 14 blocks between Broadway/Colfax and Market/16th Street
- two stations, which serve as boarding and alighting locations for passengers on Regional, Express and some Local routes
- shuttle buses, providing free service along the Mall

Equipment

Mall service is operated with six electric battery powered buses and twenty special low-emission diesel engine buses. The shuttles are 40 feet long and can accommodate up to 75 people. The shuttles' low floors allow safe, easy boarding; a fold-out ramp provides easy access for individuals in wheelchairs.

The Mall is one mile long, spanning 14 blocks between Broadway/Colfax and Market/16th Street.

Service

RTD operates service on the Mall 7 days a week from approximately 6 am to 12 midnight. In 1989, RTD operated 77,323 hours and 309,000 miles of service on the Mall, carrying 13 million passengers in 1989.

Mall shuttles operate at 70-second intervals during commuter hours providing connections to Express and Regional service. At all other times, the shuttles operate at 2 to 5 minute intervals, providing convenient transportation for shoppers and business people from stops located at each block along the Mall.

Fare Structure

RTD does not charge a fare for the 16th Street Mall Shuttle service.

Capital Projects

The Mall project, which was completed in 1982, totalled $76.3 million, including the following:

Transitway	$29.0 million
Market Street Station	$13.9 million
Civic Center Station	$21.4 million
Shuttle Vehicles	$ 5.1 million

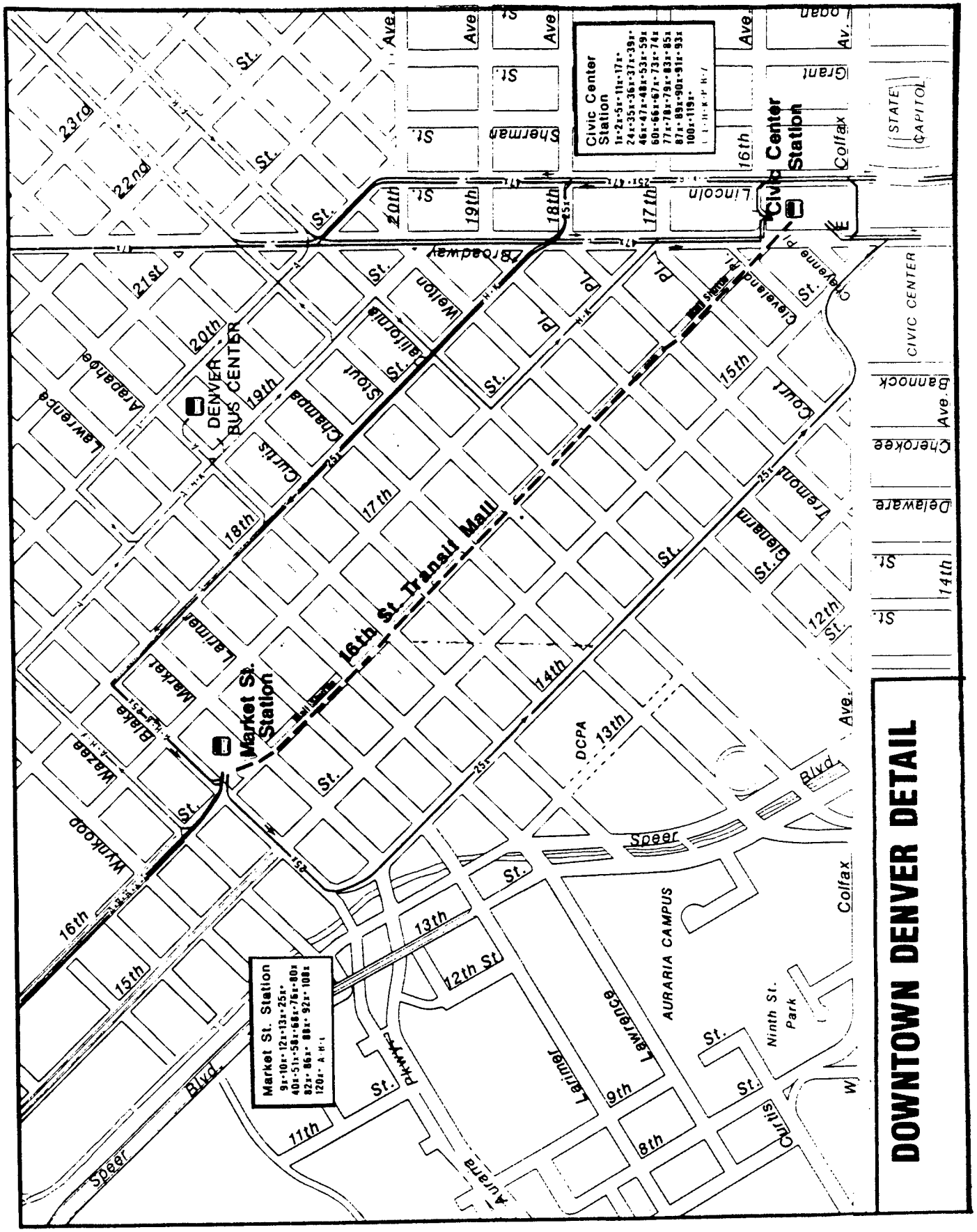
Operating and Maintenance Costs

The Mall Shuttle cost $5.35 million to operate in 1989.

Revenues

RTD does not collect fares on the 16 Street Mall Shuttle. RTD operating deficits, for all services including the Mall, are funded by a .6 percent sales tax, non-transportation revenues such as advertising, and Federal operating assistance.

16th Street Mall



Houston, TX

The Texas Special
Houston, Texas

Institutional Arrangement

The Metropolitan Transit Authority of Harris County (METRO) operates downtown shuttle service on two routes, the Texas Special Red and Blue routes. METRO initiated the service in 1984.

Equipment

Twelve buses from METRO's fleet are used to provide the shuttle service. The vehicles are not dedicated for this purpose.

Service

The Texas Special Red and Blue routes provide shuttle service throughout downtown Houston and a portion of the near east and south sides. METRO operates the service Monday through Friday from 11 a.m. to 3 p.m. at 6 minute headways. The buses stop every other block.

METRO operates approximately 74,400 vehicle revenue miles and 12,400 vehicle revenue hours and carries approximately 452,000 passengers per year on the Texas Special Red and Blue routes.

Fare Structure

One-way fare on a Texas Special is $.30; a transfer to a local route is an additional $.55.

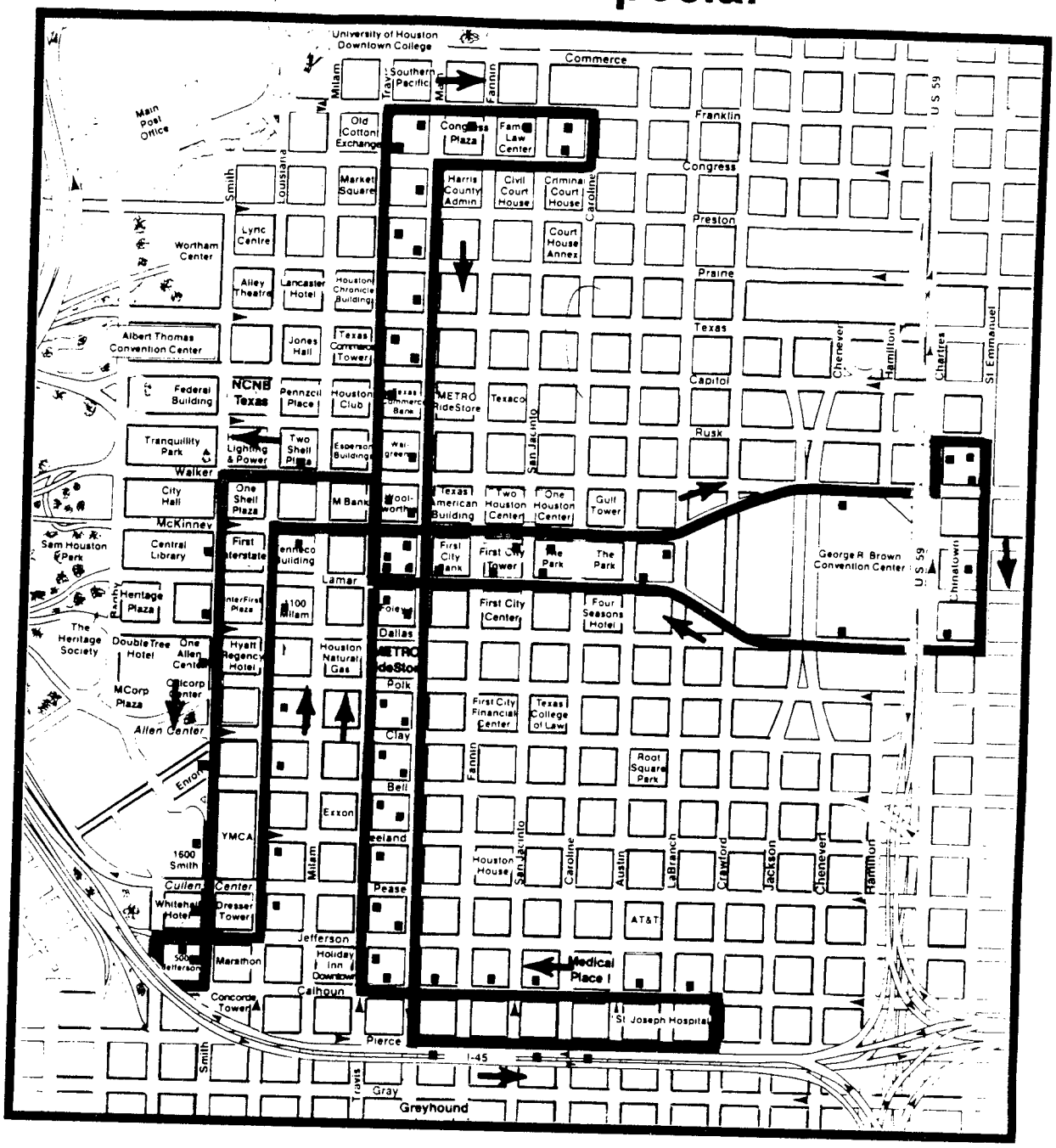
Operating and Maintenance Costs

METRO's annual operating and maintenance costs for the Texas Special routes is $563,000.

Contact

Robert Bush
Service Planning
Metropolitan Transit Authority of Harris County
(713) 739-6087

The Texas Special



Blue Route

Points of Interest

Retail

Corrigan's
Foley's
Gordon's Jewelry
Palais Royal
Sweeney's
Walgreen's
Woolworth's

Banks and Office Buildings

Esperson Buildings
Exxon
First City Center
Houston Chronicle Building
Houston Natural Gas
M Bank
Texas Commerce Tower

Other Points of Interest

Civil/Criminal Courthouse
Family Law Center
Houston Club
Old Market Square
METRO's RideStores
St. Joseph Hospital

Red Route

Points of Interest

Retail

Foley's
The Park in Houston Center
Walgreen's
Woolworth's

Banks and Office Buildings

Allen Center
Cullen Center
1100 Milam
Entex
Esperson Buildings
500 Jefferson
Houston Center
Houston Lighting & Power
InterFirst Plaza
One and Two Shell Plazas
Tenneco Building

Other Points of Interest

Central Library
Chinatown
City Hall
Tranquillity Park
Sam Houston Park
YMCA

Memphis, TN

Trolley 2
Memphis Area Transit Authority

Institutional Arrangement

The Memphis Area Transit Authority (MATA) operates the Trolley 2 service.

Equipment

MATA initiated Hustlebus service on the route several years ago using AMG buses from its regular fleet. MATA purchased, and put into service on the route in January 1990, five trolley look buses manufactured by Chance Manufacturing Company. The buses are accessible to disabled persons. Three are used in peak service. MATA just purchased two additional Chance trolley look buses. MATA also operates a lunch shuttle in east Memphis using the trolley look buses.

The route circulates through the Med Regional Medical Center, serving several hospitals, travels along Madison, and makes another loop downtown along Second, Adams, Front and Peabody streets. On outbound trips between 10 a.m. and 2 p.m., the route deviates off of Madison Avenue to serve a senior citizen highrise on Jefferson. The route is approximately 5.5 miles round-trip.

Service

MATA operates Trolley 2 service on weekdays between 6:30 a.m. and 5:30 p.m. at about 20 minute headways.

MATA does not routinely collect operating data specific to the Trolley 2 route. MATA collects data periodically as part of its Comprehensive Operations Analysis (COA). Data collected in 1988 indicates that 200 miles and 25.3 hours of service were provided and 861 passengers were carried *on a weekday* on the Trolley 2 route.

Capital Projects

The two Chance trolley look buses purchased last year cost $164,900 each. The five buses initially purchased were slightly less.

Future Plan

MATA is planning a vintage trolley service along Main Street, which bisects the downtown loop of the Trolley 2 service. Construction has begun on the track and a pedestrian/transit mall along Main Street. Ten vintage trolleys have been purchased and will be refurbished to provide the service. The Service is expected to be initiated in November 1992.

Contact

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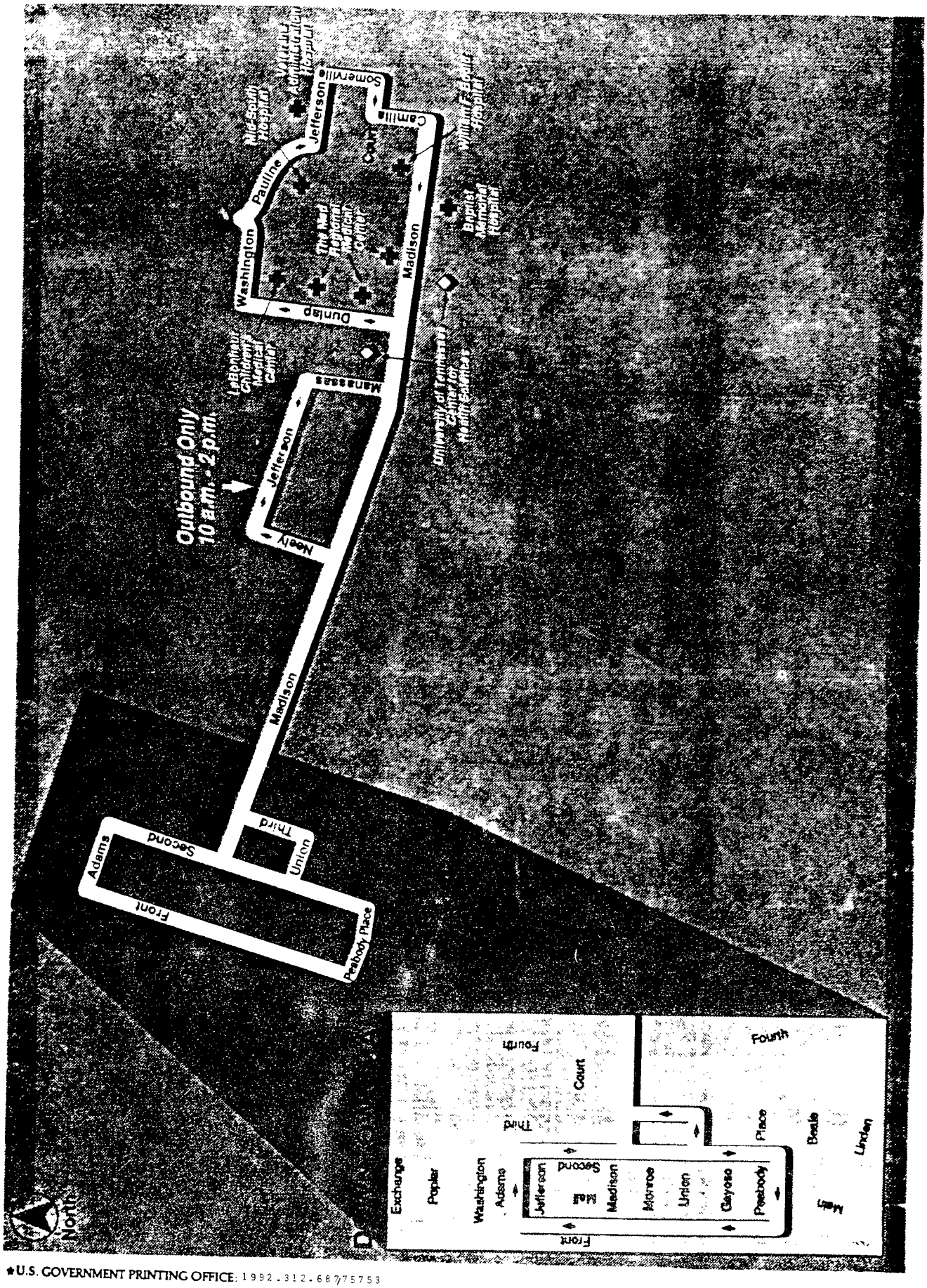
Trolley 2



★U.S. GOVERNMENT PRINTING OFFICE: 1992-312-687/75753

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