Bring Back the Streetcars! A Conservative Vision of Tomorrow's Urban Transportation

by Paul M. Weyrich and William S. Lind

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Executive Summary

For more than half a century, the context in which public transport operated was suburbanization. But recently, that has begun to change. Urban downtowns are reviving, and new towns are being built to traditional patterns. Not only can streetcars serve these non-suburban areas, they need streetcars in order to flourish.

Streetcars – which we define as rail transit vehicles designed for local transportation, powered by electricity received from an overhead wire – differ from both buses and Light Rail. Streetcars can be modern, Vintage (antique) or Heritage (reproduction) vehicles. All around the country, cities are building new streetcar lines. The most successful are tied in closely with the local transit system.

Construction costs for streetcar lines vary widely, although operating costs are almost always low. In general, construction of a streetcar line should cost less than $10 million per mile, one-half the "should cost" figure of Light Rail.

Three case studies look in detail at three streetcar lines with varying characteristics: The McKinney Avenue line in Dallas, which is operated almost entirely with volunteer labor; Memphis, Tennessee, which like Dallas uses Vintage streetcars but is operated by transit system personnel and serves as a precursor to Light Rail; and Portland, Oregon, the first streetcar line built in the U.S. since World War II that uses modern equipment.

In its conclusion, the study notes that some form of streetcar line is possible in any city or town. The appendices offer some practical steps and sources of help in undertaking a streetcar line project.

Photo: Peggy Webb, courtesy of Henry Ewert

Photo from frontispiece of The Story of the B.C. Electric Railway
by Henry Ewert (Whitecap Books Ltd., 1986).

What's Right with This Picture?

Everything. It is a fine summer day in New Westminster, British Columbia, in the year 1909. Car 39 has stopped briefly on Park Row on its way into town. It carries its passengers through a world that is ordered, serene, at peace. Their eyes feast upon the glories of Queen Anne architecture. They hear the birds and the trolley wire sing a duet in an ether as yet unpolluted by engine noise or boom boxes. Their poised servants, the motorman and conductor of the car, stand as visible assurances of responsibility and reliability. God is in His Heaven and all is right with the world.

To us, the picture is almost painful. It reminds us of a world we had, and have lost. But it does more than that. From the standpoint of public transportation, it points not only to the past, but also to a possible future. This photograph shows a virtually perfect integration of a highly attractive, widely desirable means of public transit – the streetcar – with the environment in which it operates.

The streetcar right-of-way is visually less conspicuous than the boardwalk on the other side of the street. The track is barely visible, and much of the track bed appears to be planted with clover (or maybe just weeds). The wires are few and the poles blend in with the trees. The car, though large for its time, is small enough so that its surroundings dominate the view. It is all done to a human scale, comfortable, friendly, welcoming.

How many 21st century Americans, if offered such a streetcar for their own town or city, would turn it down? Offer it we can, because the cost of building and operating a streetcar like this, a Heritage trolley, is remarkably low – lower than any other form of rail transportation. As our study will show, virtually any place that wants a streetcar line can have one.

The genesis of this study lies in a remark the mayor of Milwaukee, John Norquist, made to the authors. "When I tried to get the people of Milwaukee to go for Light Rail, they said, 'No thanks. We don't even know what Light Rail is.' When I said instead, 'Let's bring back the streetcars,' they replied, 'Hey, that's a great idea!'"

All across the country, transit advocates, transit agencies and local officials see the need for rail transportation. While buses in many places carry only the transit dependent, rail service can appeal effectively to riders from choice – people who have cars and can drive, but choose to ride transit instead. Most riders from choice represent a car removed from rush hour traffic, which benefits everyone, including the person who still drives.

The problem is, how to get started? Most cities and virtually all towns lost their rail transit at least half a century ago. Most of their citizens have never ridden a train of any kind. It is hard to go to people who have never been on a train and ask them to vote hundreds of millions or billions of dollars for "Light Rail," a term that has no meaning to them.

But a streetcar is different. Even if they have never ridden or even seen a streetcar, there seems to be an ancestral memory of what they were, and it is a pleasant memory. It brings to

mind an earlier and happier time, when "going down town" was a major event, and downtown itself was an exciting place to shop, go to dinner and see a show. Streetcars fit a downtown well, and not only downtowns but also older residential neighborhoods and new developments built to traditional designs. All of these are coming back, or trying to, and streetcars can help.

Not only do people understand what a streetcar is, and think well of it, a proposal to bring back streetcars need not break the bank. Instead of asking the voters for hundreds of millions of dollars, a few million will usually suffice, at least to get the first line up and running. Often, the money may be available without any new taxes.

Hence the purpose of this study: to show cities and towns, and transit advocates in them, how they can inaugurate rail transit in a way that makes it easy. The answer is simple: bring back the streetcars! We will take a broad look at the return of the streetcar – it is already happening – and then carefully examine three case studies of successful new streetcar lines: McKinney Avenue in Dallas, which uses Vintage (antique) streetcars and volunteer labor (and keeps costs remarkably low); Memphis, Tennessee, which also uses vintage equipment but has professional operators who are transit system employees; and Portland, Oregon, which recently opened the first post-war streetcar line that uses modern equipment. Each of these case studies offers a model other cities and towns can follow.

Of course, we do not intend to present streetcars as the solution to all transit needs. They cannot carry vast crowds of commuters in from the countryside at high speeds; that requires commuter rail. They cannot offer fast suburban service; that need is met best by Light Rail. They cannot substitute for subways in large cities (though they may usefully augment them, and complement the bus system).

What streetcars can do, almost everywhere, is help rail transit make a start. They can give people something to see, ride, understand and <u>like</u>, so that when it does come time for commuter rail or Light Rail, rail transit is no longer an unknown quantity. People can relate to it, in their own town or city, because they have ridden it or at least enjoyed the sight of it passing by. And, knowing what rail transit is, they feel comfortable voting for more.

We do not mean to suggest that the streetcar is useful only as an appetizer before a larger rail transit banquet. It remains a good and useful way of getting around town, all on its own. In fact, when other modes of rail transit are available, people still like streetcars. When San Francisco built a subway under Market Street, it ended streetcar service on the tracks above (while wisely leaving them in place). Several years ago, it put the streetcar service back, using Vintage trolleys. Now, those streetcars are full, because many regular riders prefer riding them to the subway. Similarly, when the authors visited Toronto a few years ago, the Toronto Transit Commission told us that of all the transit modes they offered – bus, trolley bus, subway, and streetcars – people said in surveys that they liked the streetcars best.

That brings us back to our wonderful photo from New Westminster, British Columbia, in 1909. Our ancestors were not fools. They had some good things going. If we are as wise as they, we will know that what worked once, can work again. The same simple, inexpensive technology, the unobtrusive tracks and wires, the charming trolley cars with their inlaid wood

and brushed brass that carried our forefathers in safety and comfort around their cities can carry us around ours. Perhaps the best resource for a community looking for new transit solutions is a picture of its own past.

Bring Back the Streetcars!

The title of our paper – the fourth in our series of studies of public transit, considered from a conservative point of view – is straightforward enough. Short of replacing the propellers on our beanies with trolley poles, we could not make it plainer. Virtually all American cities and many towns, even relatively small ones, used to have streetcars. Someone took them away from us (if you want to know who, ask Roger Rabbit). And now we want them back. We want to be able to ride a mile and smile the while, just as our grandparents did, on steel rails under electric power. What could be more natural for conservatives than wanting something good we used to have and have lost?

But why, you may ask, do we see an old-fashioned technology ("old-fashioned" is not a bad word to conservatives) serving as tomorrow's urban transportation? To answer that question, we need to step back a bit and look at more than public transit. We need to see an important change in the context in which public transit operates.

The Conte xt: Restoring Our Cities and Building Ne w Towns

For more than half a century, the context in which public transportation operated was increasing suburbanization, sometimes called "sprawl." Driven in part by government policies and in part by normal human desires for space, privacy and safety, more and more people moved out of cities and towns and into suburbs. There, they lived in single-family homes on lots large enough for children to play in, which meant relatively low density. They shopped in shopping centers several miles from their homes. Schools were also often beyond walking distance. Usually, they worked even farther away. Most Americans live this way today.

As conservatives, we do not join the Left in condemning suburbs. We understand why many people want to live in them. They are good places to have children and raise a family. Most American families with children will probably continue to live in suburbs. Government should not try to keep them from doing so.

But over the past several decades, two important counter trends have developed, trends that provide a new context for bringing back streetcars. Just like the suburbs, these trends also reflect what many people want.

The first is the recovery and restoration of city centers. All over the country, from Portland, Maine to Portland, Oregon, "downtowns" are making a comeback. Why? Because even when people live in suburbs, they want a physical "center" to their lives that offers more than a shopping center can. They want a place not too far from where they live that offers noble, historic buildings, real architecture instead of mere construction. They want the major entertainment venues only a city can support, sports stadiums and concert halls, museums and theaters. They want restaurant districts with independent restaurants, not chains, and specialty shops, like good used bookstores, that need a city to survive. They simply want the old experience of "going down town," where doing so is an event in itself, in a way that going to the shopping center can never be.

Cleveland, Ohio, provides a good example. From the 1890s through the 1930s, Cleveland was America's model city. Its downtown was a splendid place, full of grand buildings, wonderful stores, excellent restaurants and one of the best public libraries in the country. Euclid Avenue – once considered the most beautiful street in America – bustled with activity, the sidewalks thronged with well-dressed people shopping at distinguished department stores such as Higbee's and Halle's.

Then, in the 1960s, 70s and 80s, Cleveland's downtown faded away. The great stores closed, the good restaurants followed. The buildings grew shabby. Litter blew through the streets and bums and beggars took over the parks. It seemed as if the middle class that had moved to the suburbs had lost all interest in the city itself. They never came there any more.

Then, in the 1990s, the situation turned around again. The malls and shopping centers started drying up, and people began coming down town. The city built a new baseball stadium. Cleveland Union Terminal was redeveloped. The old industrial area called "the Flats," down along the Cuyahoga river, became a major restaurant and entertainment district. The city swept up the litter and encouraged the bums to move on. Now, if you visit downtown Cleveland, you will find once again a vibrant urban center, with lots to do and lots to see (go on a weekday, when you can visit the interiors of Cleveland's great banks; they rival anything you will find in London or Paris). What has happened in Cleveland is happening elsewhere; city centers are coming back to life. (And if there is a downtown anywhere that begs for Heritage streetcars, it's Cleveland's.)

On a somewhat smaller scale, something similar is occurring where people live. While suburbs are great places to raise children, more and more Americans don't have children (a sad development, we would note). Some are "empty nesters," whose children have grown up and moved on. Others are not marrying, or are marrying but not having children. For many of these people, the spread-out nature of the suburb (you usually cannot walk to anything) is inconvenient. In response, some are returning to urban living. Others are rediscovering towns.

How many people have visited a small, historic town and said to themselves, "Boy, would I like to live in a place like this!" Well, thanks to an architect named Andres Duany and a movement called Traditional Neighborhood Design, you can. In the 1980s, Mr. Duany pioneered a then-radical notion: building new towns, designed just the way they would have been in the 19th or even 18th century, as alternatives to suburbs. His towns had all the features towns used to have: grid street patterns; alleys (to keep parked cars and garages off the streets); a mix of residences, shops and businesses; even front porches and picket fences. Mr. Duany's towns are designed for people, not for cars, and people love them. If you visit one of his developments, such as Kentlands, Maryland, near Washington, D.C., you will see why. And, people will pay to live there: homes in Kentlands sell for a premium of $30,000 to $40,000 over the same floor space in surrounding suburban developments.

Traditional Neighborhood Design, as towns such as Mr. Duany's are called, is spreading, just as the revival of downtowns spread a decade or so ago. Both provide context for bringing back the streetcars. It is not merely that streetcars can serve downtowns and small towns, and

serve them well, as we know from history. The fact is, towns and especially downtowns need streetcars.

Photo: W.S. Lind

Main Street Kentlands: Streetcars would be a perfect fit.

In a town or downtown setting, streetcars do many things. Obviously, they provide mobility, without the automobile and in a way that is friendly to pedestrians. In addition, they bring development and channel it where it is wanted. They attract tourists. They let people who use transit to get to town move around in the downtown (in transit language, the "distributor" function), or, in Traditional Neighborhood Design residential areas, they pick people up from near their homes and take them to the commuter rail or Light Rail line (the "collector" function) to go into the city. They bring new people to transit; as San Francisco Municipal Railway General Manager Michael T. Burns said, "People who wouldn't ride a bus will ride a streetcar."[1] And, perhaps most important, streetcars say, "This town, this downtown, is here to stay. It's not going to go down hill again." George Sanborn, reference librarian of the Massachusetts State Transportation Library, put it well. "Every city's streetcars were different. When the streetcars went away, so did the flavor of that city."[2] Bringing back the streetcars puts back the flavor our cities and towns have lost, and tells the world that it is not going to go away again.

> In their heyday, (streetcars) were machines that generated affection, combining power and modesty. They were real trains but without the noise and smoke; they went over high bridges and quietly down tree-lined streets, across wide distances, into bustling downtowns – yet for all their modern power and range,

> you could catch them on your own street corner. The future of the trolley…may depend on certain memories, of that swaying and quiet clicking, the arrival heralded by a familiar bell.[3]

What Is a Str eetcar?

Let's say your downtown or small town – old or new – realizes it needs streetcars to fulfill its hopes and dreams for its future, a future not unlike the past. How does it begin to explain, to the larger public, the politicians, the press and the planners, what streetcars are?

Let's begin with a definition:

Streetcars are rail transit vehicles designed for local transportation, powered by electricity received from an overhead wire.

That's simple enough. As always, there will be a few exceptions. Some streetcars, in cities such as Washington, D.C., where overhead wires were forbidden, got their electric power from a "slot" in the street, a few were powered by storage batteries, and those now running in Galveston, Texas, have diesel engines. But the general rule has been and will remain electric motors with an overhead wire and a trolley pole. After all, that is why we call them "trolleys."

Photo: W.S. Lind

Streetcars in Service, Philadelphia.

Rails are a must. You cannot turn a bus into a streetcar for the same reason you cannot make a sow's ear into a silk purse: the original material always shows through.

Streetcars differ from buses, but they also differ from Light Rail (although streetcars and Light Rail work well together, and can even share the same tracks). The main difference is purpose: as our definition says, streetcars are for local transportation. A Light Rail line may operate ten or twenty miles out beyond the downtown, running at high speeds between suburban stations spaced a mile or more apart. Streetcars operate in the downtown and perhaps a bit beyond it, picking people up and letting them off at almost every street corner. Often, people will use Light Rail to come into town, then use a streetcar to get around town. Of course, along downtown portions of the Light Rail line, it also serves as local transportation. But the much lower construction and operating costs of streetcars mean they can serve the downtown more widely, and do so without reducing the overall "line speed" of Light Rail trains.

A table showing the differences between Light Rail and streetcars might be useful:[4]

Characteristic	Light Rail	Streetcar
Right-of-way	Mostly on private right-of-way; needs broad curves and gentle grades	Mostly on streets in mixed traffic; can adapt to any built environment
Materials	All new, heavy duty	Often used, light
Overhead wire	Catenary	Simple span wire
Vehicles	Large, modern, usually in two or three-car trains	Small, often traditional
Stations	Separate, built, often massive to serve whole trains	Sign indicating "Streetcar Stop"
Labor	Paid	Often volunteer, at least in part
Capital cost	Should not exceed $20 million per mile though many systems now do	Average less than $10 million per mile
Functions	Line haul, distribution	Distribution, downtown loop or shuttle
Route length	Usually more than 10 miles	Always less than 10 miles
Peak use	Rush hours	No real "peak," ridership spread throughout day
Main users	Commuters	Some commuters, also many tourists, shoppers

Photo: W.S. Lind

Light Rail

Photo: W.S. Lind

A Streetcar

Vintage and Heritage Streetcars

A streetcar line may use modern, Vintage or Heritage streetcars. While most streetcar lines in other countries use modern cars, only one American line does so, that in Portland, Oregon. Most American streetcars are "Vintage" or "Heritage" cars. What is the difference? Vintage streetcars are actual antiques, built sometime between the 1890s and the 1950s. Heritage streetcars are new cars built to antique designs.

Can actual antiques provide modern transportation? Yes, they can. The best example is the St. Charles Avenue streetcar line in New Orleans. The St. Charles Avenue line is the oldest public transit line in North America; the first tracks were laid in 1834. Just over six miles long, the St. Charles Avenue line carries about 23,000 people on an average weekday, all in a fleet of 35 Perley Thomas streetcars built in 1922 and 1923.[5] Why hasn't New Orleans bought modern streetcars? Because the citizens would revolt if it did! They love their old streetcars, with their wooden seats, clanging bells and windows that open. They offer all the charms of the good old days, plus real transportation.

Photo: Paul M. Weyrich

A New Orleans Streetcar.

While the St. Charles Avenue cars are Vintage streetcars, New Orleans is now building – in its own shops – 23 Heritage cars for the new Canal Street streetcar line. These will look like the Perley Thomas cars, but they will be replicas, which is what makes them Heritage streetcars.

Which make the most sense for your city's or town's new streetcar line, modern streetcars, Vintage cars or Heritage cars? That is up to you. In general, modern streetcars are the most expensive, but they offer air conditioning (which Heritage cars can also offer) and quieter, smoother rides. If you want to project a modern image, you will probably want modern streetcars. Vintage streetcars make the most sense if you have streetcars that actually used to run in your city or town, or if you want to use the famous Art Deco PCC streetcars, which are readily available. Heritage streetcars are easier to maintain than a mixed fleet of Vintage cars, and, being new, can stand up to heavy usage. At the same time, they offer a historic look and feel that fit well into a downtown or small town made up mainly of historic buildings.

Photo: Paul M. Weyrich

PCC Streetcar in Kenosha, Wisconsin.

Our advice would be, get streetcars that fit well with their surroundings. Because streetcars and cities are natural partners, that isn't hard to do.

Who Else Is Doing It?

When you propose a new streetcar line for your city or town, someone will probably ask, "Is anyone else doing this?" The answer is yes. Lots of places are, so many it is hard to keep track of them all.

Other than the new streetcar in Portland, Oregon, all the existing lines use Heritage or Vintage equipment. To keep things simple, we will refer to them all as "Heritage lines" here. These

Heritage lines are of two types: stand-alone operations, which are not integrated into the rest of the local public transit system, and integrated lines. All the lines covered here are "common carriers," which people take to go somewhere, not just for a trolley ride.

The stand-alone lines operate mostly for tourists, although they do provide some local transportation to residents. They include:

- Detroit, Michigan. This was the first purpose-built Heritage streetcar line in the U.S. It opened in 1976. The narrow-gauge line is 1.2 miles long, running through downtown Detroit from the Renaissance Center to Grand Circus Park. It has a wonderful collection of nine antique streetcars, including three built in the 1890s. The hours of operation are from 8 AM to 6 PM weekdays and 10 AM to 6 PM on weekends. The fare is 50 cents, and average daily ridership is about 150 in spring and summer and 60 in winter.

- Tucson, Arizona. Tucson's Old Pueblo Trolley runs for 1.1 miles from the main gate of the University of Arizona to downtown; many of its passengers are students at the university. This streetcar line is operated solely by volunteers, and has just one streetcar currently in service, a 1953 Hankai Electric Railway car from Japan. At present, service is offered only on Friday, Saturday and Sunday. However, the line is to be extended to the Rio Nuevo historical area, at which point daily operation is likely. Three more streetcars are being restored for service, including a 1936 tram from Brussels, Belgium and a 1912 American Car Company streetcar from St. Louis.

- Charlotte, North Carolina. At present, the non-profit Charlotte Trolley runs weekdays–only over a 1.2-mile non-electrified line (the car tows a generator). But the city of Charlotte has invested $10 million in the operation, which will extend the line 1.5 miles through (literally!) the Convention Center and into downtown; the whole line will also be electrified. When the extension is completed, Charlotte's five streetcars will operate seven days a week. The fleet includes a 1922 Birney Safety car, a 1927 Brill Birney, a 1949 St. Louis PCC, a 1927 Southern Public Utilities car and a 1914 United Electric Car from Preston, England. Amazingly, new apartment buildings, condominiums and restaurants are already being built with the streetcar line as the focus. Current ridership is about 200 people per day; that should increase substantially when the extension opens.

- San Pedro, California. San Pedro will soon begin operation of one of the great icons from the streetcar era – the famous "Red Cars" of Pacific Electric. Intended to serve passengers from the cruise ships that dock in San Pedro, this 1.5-mile line will operate four days per week with three Pacific Electric cars – one original and two newly-built replicas. The planned fare is 25 cents, and the new line is to begin operations before the end of 2002.

- Little Rock, Arkansas. Service is to begin in 2003 on a 2.2-mile line from North Little Rock to downtown. Three Heritage cars are being built by Gomaco in Iowa. Fares are likely to be 50 cents, operation will be seven days a week and ridership is estimated at 1500 daily.

- Several cities that have Light Rail lines also operate Heritage streetcars over portions of the Light Rail route. MAX in Portland, Oregon, runs replicas of its famous "Council

Crest" cars from Lloyd Center to Downtown Portland on Saturdays and Sundays from March through December. The fare is free and the cars carry around 6000 people each day. Two Council Crest cars also now operate on weekends on Portland's new streetcar line. San Jose, California, also runs historic cars through the downtown, on the Light Rail tracks, charging regular Light Rail fares of $1.25.

In addition to these stand-alone streetcar lines, a number of cities have streetcar lines that are tied in with the regular transit system. Interestingly, some are "survivors" – streetcar lines that simply never quit or received new equipment, and with the passage of time now find themselves numbered among the Heritage lines. We have already touched on one of these, perhaps the most famous: New Orleans's St. Charles Avenue line. That line, with its fleet of Perley Thomas streetcars built in the 1920s, is fully a part of the New Orleans transit system, carrying some 23,000 passengers each day for a fare of $1.25. It has also become one of New Orleans's major tourist attractions, almost on a par with San Francisco's famous cable cars.

Not only has the St. Charles Avenue line survived, it is so successful that it has sparked a general streetcar revival in New Orleans. In 1988, the city opened a new Riverfront line. Now, the Canal Street streetcar line is being restored. About five miles of new track with 23 replica Perley Thomas cars will run from the Esplanade stop of the Riverfront line to the famous New Orleans cemeteries (it will also connect with the St. Charles Avenue line). And when that is open, New Orleans intends to restore the famous "streetcar named Desire," on a new line that will connect most of the city's tourist attractions. Evidently, a city that thrives on tourism has found streetcars a good investment.

Another "survivor" Heritage streetcar line is to be found in Boston, Massachusetts. Many years ago, the "T," as the Boston transit system is universally known, built what they called a high-speed trolley line, connecting the Ashmont Heavy Rail Red Line station with the community of Mattapan, about two-and-a-half miles away. In the 1940s, the line was assigned a group of PCC cars. And then, as if by magic, it all just froze in time. The same PCC cars are still running today, from 4:30 AM every morning to 1:30 AM the next day, carrying about 7000 passengers daily. The T has tried for years to close the Ashmont-Mattapan line, but community pressure has stopped them every time. The people the line serves – who are mostly poor and mostly black – love their streetcars and are not about to let anyone take them away. Recently, the T relented and began rebuilding the old PCC cars, restoring their beautiful original color scheme and getting them ready for their second half-century of service.

Meanwhile, in Philadelphia work is underway to restore an old streetcar line, Route 15 – Girard Avenue, which has been served by buses since 1992. SEPTA, the Philadelphia transit system, has decided to use restored PCC cars rather than modern Light Rail Vehicles on Route 15, and it is now rebuilding about 20 PCCs. As in Boston, the "new" cars will be entering their second half-century of service. In addition to local neighborhoods, Route 15 – Girard Avenue runs past a number of historic churches and the famous Philadelphia Zoo, so the restored line may serve tourists as well as residents.

In addition to survivors, a number of new streetcar lines are also fully integrated components of the local transit system. One of the most interesting is the new Heritage streetcar line in the small city (90,000) of Kenosha, Wisconsin. When the old American Motors plant right in the heart of downtown Kenosha closed and then was demolished, it left a potentially disastrous hole in the city. But a young city official named Joe McCarthy saw an opportunity. Guided by his vision, Kenosha built a Heritage streetcar line in the form of a loop that connects the train station and the waterfront, running alongside the vacant land. The line cost just $4 million, including five PCC streetcars.

And it is working! New housing developments are going up where the car factory once stood; their residents can take the streetcar from their doorstep to catch commuter trains to Chicago. A new museum has opened at the waterfront, and it has almost no parking; its visitors come by streetcar. Much of the downtown business district lies on or a short walk from the streetcar line. Most Kenosha bus lines interchange with the trolley.

Tragically, Joe McCarthy died of a heart attack just weeks after the streetcar line began service. But its success will be a memorial to him for many decades to come.

One of the first integrated streetcar lines is Seattle's Route 99, the Waterfront line, which began operating in 1982. The 2.5-mile line has five former Melbourne, Australia streetcars built in 1927. It operates seven days a week from 7 AM to 11 PM, with cars running every twenty minutes. Fares are $1 to $1.25, depending on time of day, and Route 99 is fully integrated with the Seattle bus system. The southern end of the line is across the street from the International District station, which is a major terminal for the trolleybus subway. Commuters make up a portion of the 400 average weekday riders; Saturday ridership is about 800 and Sunday's approaches 600. Some downtown special events have seen the line carry several thousand people on a single evening.

Spring, 2002, is scheduled to see the opening of Tampa, Florida's new Heritage streetcar line, the TECO line, named for the Tampa Electric Company that used to operate the city's many streetcars. This 2.3 mile line, which will connect Tampa with the Ybor City entertainment district, is being built and will be operated solely with private funds. It will have eight replica Birney double-truck streetcars, plus two Vintage Birney's which are now being restored. The large fleet will enable the operators to revive an old streetcar motto, "Always a car in sight."

The TECO line will run seven days a week, from 10 AM to 10 PM, with later service on weekends. Patronage is projected at 250,000 people per year, which may prove conservative as significant development is already taking place along the line. TECO intends to have a transfer arrangement with Tampa's HARTline buses.

Perhaps the most successful of all the new integrated streetcar lines is San Francisco's F line, also known as the Market Street Railway. Years ago, when San Francisco built a subway under Market Street, it left the streetcar tracks on the surface in place. In 1983, the Chamber of Commerce used those tracks for a Historic Trolley Festival, running a number of the city's antique streetcars. The festival was so popular it was repeated in subsequent years. Then, in

1995, the old cars began regular service on Market Street, running from the Castro District downtown to the Financial District near the Ferry Terminal.

In the year 2000, a new line opened, the F line. Also using historic streetcars (Vintage cars, actual antiques), the F line continues the Market Street line on new trackage along the waterfront to Fisherman's Wharf. The F line was an immediate huge success, carrying so many people the cars were crowded with standees. Today, ridership on the F line (a six-mile route, including Market Street) is 19,200 on an average weekday, 10,000 on Saturdays and 9,500 on Sundays. Service hours are 6:00 AM to 12:30 AM.

The F line's fleet of Vintage streetcars is unique. Now made up of 25 streetcars in regular service, with 4 more undergoing restoration, it includes car 578-S, built in 1895 and one of the oldest operable streetcars in the world; Car No. 1, the first streetcar bought by San Francisco's municipally-owned streetcar system; and streetcars from Oporto, Portugal; Melbourne, Australia; Hiroshima and Osaka, Japan; Moscow, Russia; and Blackpool, England. The everyday operating fleet relies on Peter Witt cars (first developed in Cleveland, Ohio) from Milan, Italy and restored PCC cars. The latter are painted in the color schemes of cities across America that once ran PCCs on their own streetcar lines.

As a New York Times reporter wrote,

> While the F line is fast becoming one of San Francisco's most popular tourist attractions, it may turn out to be much more. Day after day, it is reminding visitors of something they may have forgotten: that trolleys are a good way to get around congested cities.[6]

Some of these streetcar lines are part of Business Improvement Districts (BIDs), which are broad-scale efforts to bring back urban areas which have seen better days. BIDs are generally non-profit corporations which bring together volunteer efforts, city government and historic preservation groups to gain resources and provide direction to local rehabilitation movements. Streetcars are a natural "fit" with BIDs, because, like other rail transit, streetcars promote economic development. As Greg Hnedak, one of the planners of Memphis' Main Street Trolley put it, "Buses are cheaper, but when you put rails down, you have made a permanent commitment, and developers can see that commitment. Rail lines become development corridors."[7]

As this survey illustrates, streetcar lines that are integrated into the local transit system are generally more useful and attract greater ridership than those which stand alone. Streetcars are, after all, real transportation, and should be treated like other transportation. They perform a real function for local residents, and should not be seen merely as a tourist attraction (though they do also attract tourists). This is true whether the streetcar line is actually owned and operated by the local transit authority, as in San Francisco, or is a separate entity. Separate need not mean disconnected, and should not. Both the streetcar operator and the transit system benefit when the two are integrated as if they were part of a seamless system, at least from the passenger's point of view.

What Does It Cost?

We will take a detailed look at costs in our three case studies, which make up the next section of this paper. In general, the answer to the question, "What does it cost?", is the same answer J.P. Morgan gave when a reporter asked him, "Mr. Morgan, what is the stock market going to do?" The great financier replied, "It will fluctuate."

Costs of streetcar lines vary widely, because the characteristics of streetcar lines vary widely. In fact, it can be difficult to obtain the construction cost of a streetcar line, because building the line is often part of a larger project that includes other elements.

San Francisco's new F line provides a good example. This is a double-track streetcar line, built to Light Rail standards, which now carries almost 20,000 people per day (all in Vintage cars, we would note). The construction cost was about $30 million per mile, which is high even for Light Rail. But much of that money went for visual enhancements that have nothing to do with running streetcars, including extensive use of granite and marble and even planting palm trees along the right-of-way. A city that wanted just the streetcar line without the Carmen Miranda-style décor could build it for substantially less.[8]

At the other end of the scale is the excellent and highly innovative two-mile streetcar line recently opened in Kenosha, Wisconsin. The total cost was just $4 million, or $2 million per mile, including five restored PCC streetcars.

Some other examples include:

- Portland, Oregon, the only line using modern streetcars. The 4.6 mile loop line was constructed for $12.4 million per mile, including seven new streetcars, built in the Czech Republic.

- Tampa, Florida, a 2.3 mile line built for $13.7 million per mile including eight Heritage streetcars. The cars themselves, replicas of 1920's Birney streetcars, cost $600,000 each (compared to up to $3 million for a modern Light Rail Vehicle).

- Little Rock, Arkansas, a 2.1 mile line built for $7.1 million per mile, including three streetcars.[9]

- San Pedro, California, a 1.5 mile line that recreates the old Pacific Electric "Red Cars" for $4 million per mile, including three streetcars, one Vintage and two Heritage.[10]

The costs of Heritage and Vintage streetcars vary as much as construction costs of streetcar lines. Heritage streetcars cost between $200,000 and $800,000, depending on type and features (e.g., air conditioning). One of the best sources of Vintage streetcars is Milan, Italy, which is gradually selling off its vast fleet of 1920s-built Peter Witt cars, a type that was widely used in the U.S. These cars go for $25,000 - $35,000 each, and have been maintained so faithfully that they can go into service the day they arrive. Other Vintage cars vary greatly in price, depending largely on condition; some last served as chicken coops.

Since many Vintage and Heritage streetcar lines make use of volunteer labor, operating costs can be very low. Perhaps the best guide to operating costs for a major streetcar system that hauls lots of people and uses only paid labor – transit company employees – is our old favorite, New Orleans. An APTA analysis, using data from the 1996 National Transit Database, compared 20 Light Rail systems' operating costs, including those of New Orleans streetcar lines (St. Charles Avenue and the Waterfront line).[11] Operating costs were measured in four ways, and New Orleans ranked as follows (20th is lowest in operating cost):

- Operating expense per passenger mile: 16th
- Operating cost per vehicle mile: 17th
- Operating cost per vehicle hour: 18th
- Operating cost per passenger trip: 20th

An interesting wrinkle on operating costs comes from Tampa, Florida. There, the organization that will operate the Heritage streetcars has raised an endowment of almost $7 million, the interest from which will cover part of the operating costs.

In closing the discussion of costs – and stressing again that they vary widely – let us offer a minor Philippic. The greatest threat to the future of rail transit is not Wendell Cox and the rest of the anti-transit troubadors.[12] The greatest threat to America's rail renaissance is escalating costs, costs that go far beyond what is required to offer good service. We know Light Rail can be built and built well for $20 million per mile, because some systems do it; the latest extension of Dallas's DART Light Rail system came in at just over $18 million per mile. St. Louis and Baltimore did it, too. Why, then, do we see more and more Light Rail systems asking for $40 million, $60 million, and in one case more than $100 million per mile? The answer, too often, appears to be overbuilding, gold plating, and the pernicious practice of placating NIMBYs with tunneling, which should only be used when geographic obstacles make it unavoidable.

We see signs of the same disease appearing in streetcar lines. Museums build streetcar lines and operate them for a pittance. So can, and should, public authorities. San Francisco's F line is a great success, but why should a poor streetcar be billed for recreating the Taj Mahal?

The authors of this paper both recall vividly an incident all too typical in overbuilding. When Cleveland's fine old Shaker Rapid line was rebuilt, the cost was more than $100 million, and the result was slower trains running on less frequent schedules. When someone asked the local U.S. Representative about the outrage, the reply was, "Why not? It's free money," meaning Federal funds. Bah! Humbug! Where's our old friend Mr. Scrooge when the taxpayer needs him?

Currently, the Federal Transit Administration's process for giving new rail proposals a "recommended" or "not recommended" rating is based too heavily on ridership forecasts. We strongly suggest it should also include a base line "should cost" figure of not more than $20 million per mile for Light Rail and $10 million per mile for streetcars (a similar "should-cost" figure should be set for urban highway construction). Exceptions should be granted, but only

when circumstances such as the need to tunnel through a mountain or other unavoidable local conditions clearly justify them.

Some rail advocates may see this as treason. In fact, we are trying to save rail transit from itself, to prevent Light Rail and streetcars from doing what Heavy Rail did and pricing themselves out of the market.

And just in case you have forgotten, please remember that we are conservatives. We believe that the right place for a taxpayer's dollar is in his own pocket, not the pocket of some fat cat politician or bloated government agency. Off with their heads!

Having gotten that off our chests, let us now proceed to see what three different cities, using three quite different approaches, have done to give their citizens the many benefits of streetcar service.

Three Case Studies

As we have seen in our previous studies in this series, looking in some detail at specific operations can be useful. Here, we will consider three different streetcar lines or systems, each with different characteristics. The first, the McKinney Avenue Transit Authority (MATA) in Dallas, Texas, represents Vintage trolleys run almost entirely with volunteer labor. The second, in Memphis, Tennessee, is also a Vintage trolley operation, but it is run by the local transit authority and operated by transit system employees. Memphis also represents the use of Vintage trolleys as precursors to Light Rail. Finally, we will examine the new streetcar line in Portland, Oregon, which is operated with modern streetcars. These three cases cover a sufficiently wide spectrum that any city or town considering bringing back streetcars will find at least one speaks to its own situation.

Dallas, Texas

The early history of the McKinney Avenue trolley line holds some useful lessons for anyone interested in bringing back streetcars. It is worth quoting at some length:

> In 1981 a Dallas area along McKinney Avenue, characterized by restaurants and specialty shops, was being redeveloped. The effort included excavation and renovation of the brick street paving. Removal of the asphalt revealed a double-track streetcar line that appeared to be in generally sound condition. A local businessman, with restaurant interests along this route, decided that trolley service on that portion of McKinney Avenue would enhance both the ambiance and commercial success of the redevelopment project. His observation that, "Wouldn't it be nice to have some old streetcars running down our street?" drew local media attention. After screening vintage Dallas trolley movies (supplied by a local VT (Vintage Trolley) enthusiast), the businessman organized MATA as a nonprofit corporation—Section 501(c)(3) of the Internal Revenue Code—to build and operate the line. Two local trolley enthusiasts joined the board to oversee technical aspects of the project.
>
> The businessman funded a professional feasibility study that supported the concept. He arranged pro bono public relations and advertising services, conducted fund-raising events, secured local business funding pledges, achieved city support, and applied successfully for two UMTA construction grants. MATA's early initiatives addressed mainly political hurdles. The businessman headed a small team that promoted MATA steadily before Dallas' city government for several years. This major effort finally produced the city's official endorsement and passage, in the Texas Senate, of a bill that limited the liability of city-contracted private transport firms to that of the city itself. Once these hurdles were cleared, MATA began to develop a physical plant.[13]

That physical plant consisted of a 2.8 mile streetcar line, four vintage streetcars and a car barn. The total cost was $5.5 million, and $3 million of that came from the private sector; a $2.5 million Federal grant supplied the rest. The city of Dallas spent about $200,000 for

signs, pavement marking and traffic light relocation. All the antique streetcars were privately donated or funded.

Photo: Van Wilkins

McKinney Avenue Transit Authority Streetcar.

Service began on July 22, 1989, and it continues today. All operating costs have been privately funded. In its first two years of operation, the McKinney Avenue streetcar had a daily ridership load factor about double that of the surrounding bus system.[14] In 1990, the trolley line carried 236,074 passengers and recovered 46% of its costs from the farebox.[15]

In 1991, MATA faced a financial crisis that led to its current structure as an almost all-volunteer operation (it currently has three paid employees). The fact that the system uses mostly volunteer labor is a principal reason why its operation requires no public funding. Is it really practical to try to run a real transit operation with volunteer labor? McKinney Avenue's answer is a resounding "Yes!" Adetailed study of the line, published in 1992, notes:

> MATA's time sheets reveal that two-thirds of the operating labor hours are volunteer. This volunteer group includes the chief of cardiology at a major hospital, a retired public utility chairman, a bus driver's union president, educators, business owners, wage earners and college students. Generally they are reliable, motivated, and professional in demeanor. Their accident rate is lower that that of MATA's paid employees…MATA's policy assigns each volunteer to a specific task or project that is defined with specific beginnings and completions. Once the volunteer is matched with the job, they usually carry out the assignment with minimal supervision. The volunteer has both the responsibility and the personal recognition for a job well done. The key to volunteer motivation is organization, individual responsibility, recognition, and praise.[16]

The same study, "McKinney Avenue Transit Authority Experience," by Frank A Schultz III and John B. McCall (Transportation Research Record 1361), makes a number of other observations that may be useful to cities or towns considering a Vintage trolley line:

- Is it practical to use actual antique streetcars as opposed to replicas? The study notes:

> In retrospect, choice of old cars over replicas was the correct approach. The traditions of MATA's steel car body designs, one of which is nearly 90 years old, have proven to be extremely reliable. It was the attraction of the genuine article that drew the large, skilled volunteer restorative force that did much of the work on the project. Even if the labor had been purchased, a restored car would still have been less expensive than an estimated (in 1992) $450,000 reproduction car. With the volunteer force, the cost of restoring a double-truck car was approximately $185,000. Additionally, MATA has tied its promotion and marketing to "genuine antique streetcars." [17]

- Is it possible to use the old streetcar rails which still lie under the asphalt on many city streets? The study says, "MATA experience indicates that revival of abandoned track in-place can be done at 10 percent of the cost of new track on a new route." [18] Of course, in some instances the track was worn out by the time regular streetcar service ended, and replacement rails will be needed. But even if that is the case, a great deal of the expense of utility line relocation can be avoided by using old streetcar right-of-way.

- Is there a good book that can guide a town or city in establishing a streetcar line? The study reaches back into the past to recommend one: "For a project manager new to Vintage Trolleys, a most useful reference is the Electric Railway Handbook by Albert S. Richey, published by McGraw-Hill in 1924. Reprints of this volume are available from the Association of Railway Museums." [19]

Streetcars have now been running on McKinney Avenue for more than a dozen years. Far from being a mere tourist attraction, the line is in the process of becoming a formal part of Dallas's rail transit system. In 1996, Dallas's DART transit system opened its first Light Rail line. The McKinney Avenue streetcar line is now being extended on each end to a stop on the

Light Rail system. Passengers will be able to transfer easily from Light Rail to streetcar, with the streetcar performing the function it does best, carrying people to local destinations within the city.

Still using almost entirely volunteer labor, the McKinney Avenue streetcar runs seven days a week, twelve hours a day (and later on weekends), 365 days a year. When the extensions to DART are completed, streetcars will run every ten minutes during peak demand hours. McKinney Avenue now has four antique streetcars in service, with four more being rehabilitated. Last year it carried about 50,000 people. It gets not one dollar in taxpayer money for operation. The one-mile extension on the north end is being built for the remarkably low figure of $3.3 million.[20]

If you want to bring the streetcars back to your town or city and don't have much money to do it with, the McKinney Avenue Transit Authority offers a very good model. You can contact them at (214) 855-0006.

Memphis, Tennessee

Photo: Van Wilkens

A Streetcar in Memphis, Tennessee.

In an effort to reverse urban decline, Memphis decided in the 1970s to create a downtown pedestrian mall, running about eight-tenths of a mile on Main Street, which parallels the

Mississippi River. By the late 1980s, the mall was failing. Part of the reason was that it was too long for people to walk.[21]

When Memphis decided to redevelop the mall, it realized transit had to be part of the solution. Buses running down the mall were considered, but rejected as incompatible with pedestrians. In 1990, the city decided a streetcar line was the solution, using Vintage streetcars.

The initial line began service in 1993. It was 2.5 miles long, mostly double-tracked. The streetcars served the mall, but also ran beyond it on both ends to serve areas that needed economic development. Outside the mall, the streetcars ran on the street, sharing a lane with automobile traffic. In 1997, the initial line was converted into a loop by adding a parallel line which ran mostly on an old railroad track. The addition brought the total system up to a length of five miles.

All but one of the streetcars are antiques, of two basic designs. Seven cars are four-wheel Brill streetcars, two built in the U.S. in 1912, the rest built later in Portugal to the same Brill design. The Brill cars have wooden bodies and 19 seats. The other seven antique cars (more are being restored) are larger (52 seats), slightly newer, have metal bodies and came from Melbourne, Australia. As elsewhere, the antique cars in Memphis have proven reliable in regular service.

Service is provided seven days a week, and the fare is $.60 ($.30 around lunchtime). Service begins early on weekdays, at 6 AM, to accommodate people going to work. It runs late on weekends, to 1 AM and sometimes later, to serve people who have come downtown for entertainment. Eleven streetcars are operated in peak travel hours, with a car coming by about every five minutes.

In term of ridership, the streetcars of Memphis have been a big success. In the first full year of service, 1994, ridership was 468,115; in 1999, it was 922,475, and in the year 2000 it rose to 941,011. Estimated current daily ridership is 2774 on weekdays and 1704 on weekends. In 1999, the streetcars carried almost three times more passengers per revenue mile than Memphis's buses.[22]

It may be helpful to other cities and towns that are considering streetcars to look in more detail at streetcar riders in Memphis, because it shows what streetcars can do. A good study of the Memphis streetcar line by Mr. Thomas Fox, the system's Director of Planning and Capital Projects, notes that:

> Monday through Thursday ridership is comprised mainly of downtown workers and residents who use the system on a regular basis. Friday through Sunday ridership is more dependent on the activities that occur downtown. Saturday is the highest ridership day, with 3,887 riders in 1999…Monday through Thursday ridership is fairly stable but gradually increases as the week progresses, ranging between 2,030 and 2,456 daily patrons. Individual day ridership peaks generally coincide with major events in the downtown area. For example, during the Memphis in May Beale Street Music Festival on Friday, May 7, through Sunday, May 9, 1999, the (streetcars) carried 34,479

> passengers, with 16,282 riders on Saturday. Other recurring events that are highly dependent on the trolley system for movement of large numbers of people are Memphis Redbirds (Triple A) baseball games at AutoZone Park, concerts and college basketball games at the Pyramid Arena, conventions, and cultural exhibits at the Cook Convention Center.[23]

An on-board survey of streetcar riders in Memphis taken in 1994 found that:

- 51 percent were riding for transportation-related reasons and 49 percent for entertainment-related reasons;
- 17 percent "normally get around Memphis" by public transit;
- 61 percent had "eaten at restaurants along the trolley line," and 34 percent had "shopped at stores along the trolley line;" and
- 36% had incomes over $50,000; a total of 14 percent had incomes below $20,000.[24]

How has the streetcar line helped economic development? The south end of the line terminates at Central Station, Memphis's historic main railroad station. There, a redevelopment project includes a multi-modal transit center serving the streetcars, buses, Amtrak and automobile park-and-ride. The project also includes 12,000 square feet of commercial space, 63 apartments and a police station. At the north end, a similar multi-modal transit center also offers a day care center, a welfare-to-work career center and another police station.[25] Mr. Fox notes:

> Ridership (on the streetcars) has grown for a variety of reasons, the most important of which is the gradual growth and diversification of development in downtown Memphis. Since 1990, residential population has expanded from fewer than 1000 to more than 5000 people. Entertainment-type development – such as AutoZone Park, Peabody Place, Gibson Guitar Factory and Museum, and numerous restaurants, clubs, and hotels – has resulted in downtown becoming more of a destination for nonwork activities.[26]

What about costs? The original 2.5 mile line had a total cost, including the streetcars themselves, of $34,887,072, or a somewhat high $14 million per mile. However, almost half of this cost - $15,834,000 – was for improvements to the pedestrian mall. The second 2.5 mile line, which completed the loop, cost just $9,428,860, or $3.8 million per mile. Why the big difference? As noted, the cost of the initial line included extensive repairs to the mall itself, plus construction of a new operations and maintenance facility and a great deal of utility relocation. In contrast, the second line used an existing rail line, including the existing track, for most of its length.[27] Here as elsewhere, we see that construction costs vary greatly depending upon the specific characteristics of the streetcar line.

If we look at the sources of the construction funding, we see something else that may be useful to other towns and cities. 69% of the construction cost of the initial line and 44% of the cost of the second line came from money that was initially allocated by the Federal government for Interstate highway construction. When Memphis decided not to build the planned extension of Interstate 40, the FTA transferred the funds to the streetcar project. ISTEA and TEA 21 Federal legislation allow a great deal of flexibility in using highway

funds for transit, so other cities may also be able to fund a streetcar line with money intended for unwanted highways.

Unlike Dallas, Memphis maintains and operates its streetcars with regular transit authority labor, not volunteers. Still, its operating costs are modest. In the APTA comparison of twenty Light Rail systems referenced earlier, Memphis's streetcar operating costs ranked 15th per vehicle mile (20th is lowest), 19th per vehicle hour, and 11th per passenger trip. Operating cost per passenger mile was 2nd, but that largely reflects the line's comparatively short length (most Light Rail lines are much longer).[28]

As a streetcar system, Memphis has been quite successful in terms of costs, ridership and effects on downtown revival. But Memphis has another characteristic that is of interest: from the outset, the city saw bringing back the streetcars as a first step toward a modern Light Rail system.

Those plans are now moving toward fruition. Memphis is currently building a two-mile extension of the streetcar system, and the new line is being built to Light Rail standards, for eventual use by modern Light Rail vehicles. Running at right angles to the downtown loop along Madison Avenue, the new line will connect the downtown with the Medical Center district. Mr. Fox writes:

> The project is the last segment of the downtown rail circulation system as well as the first segment of a regional light rail line…The extension is being designed to accommodate modern light rail vehicles, but vintage trolleys will be utilized until a proposed light rail line is implemented and a fleet of modern vehicles is acquired. The long-range Regional Transit Plan includes light rail in three corridors by the year 2020…Each recommended corridor connects to the (streetcar line) and downtown transportation terminals with the purpose of eventually mixing heritage and modern rail vehicles on Main Street, the riverfront, and Madison Avenue, and providing intermodal connections at the terminals.[29]

The cost per mile is about $24 million (plus two bridges for $8 million), but again, this line is built to Light Rail Standards.[30]

By starting with streetcars, then moving to Light Rail, Memphis has found a way around a major obstacle facing cities that want to initiate Light Rail: nobody locally understands what Light Rail is. Once streetcars are running and people have experienced them, Light Rail is much easier to explain. The mystery – and the fears – go away. And when Light Rail is built, it has a downtown circulator already operating with which it can connect.

Compared to Dallas's McKinney Avenue streetcar, the streetcar system in Memphis offers a somewhat "upscale" alternative, slightly more expensive, but highly suitable as a precursor to Light Rail. It, too, is a model other cities and perhaps some towns could do well to emulate – especially if they have funds for a highway they no longer want to build.

Portland, Oregon

If Dallas's McKinney Avenue streetcar represents the "low end" for new American streetcar lines (in cost, not in service quality), the new Portland Streetcar is the high end. When operations began on July 20, 2001, Portland, Oregon, became the first American city since World War II to inaugurate streetcar service with modern equipment.

Photo: Harold Geissenheimer

A Streetcar in Portland, Oregon.

Portland's new streetcar line is a 2.4 mile long downtown loop (4.8 miles of track) with five modern streetcars built in the Czech Republic. The cars run from 5:30 AM to midnight Monday through Thursday and to 1:30 AM on Friday and Saturday; through most of the day, service is at 15-minute intervals. By the end of its first week of service, it was already carrying about 7000 people each day – almost double what was projected. The line connects many important downtown venues, from Portland State University on one end to Good Samaritan Hospital on the other. It also provides local distributor service to Portland's MAX Light Rail system, and is intended to spur and shape redevelopment of two major downtown locations, one a former railroad yard.

From the beginning, the Portland Streetcar was a citizen's project, not just a government program. Starting in 1990, a team of consultants worked with a Citizens Advisory Committee to plan the streetcar route. The initial alignment was presented to the public, then changed significantly in response to public comments and suggestions. Development considerations played a major role in those changes. One study notes,

> Dialogue was beginning with the property owners and other interested parties about two large parcels of undeveloped land near the central city. Those parcels are the River District to the north of downtown and North Macadam to the south. The conversations centered around the benefits to the City and to the property owners of not developing huge amounts of office space. Rather than competing with the downtown office market, it was proposed to complement the jobs market with new medium-to high-density housing and to use the streetcar as the appropriate transit tool to facilitate and support that development.[31]

Once the route was chosen, citizen involvement did not end. On the contrary, a new, non-profit corporation, Portland Streetcar, Inc., was formed to build and operate the line. The Board of Directors is made up not of politicians but of leading Portland businessmen, developers, and executives. Only one elected official, City Commissioner Charlie Hales (a leading proponent of streetcars for Portland), is a member. By giving private citizens, including developers, a leading role in the streetcar project, Portland has insured that the community is united behind the streetcar line instead of being divided by it.

Portland was also careful to draw a distinction between streetcars and Light Rail. Portland's Light Rail system, MAX, opened in 1986 and has since expanded with several new lines. MAX is popular and, in terms of ridership, very successful. But the smaller, more intimate scale of streetcars was emphasized strongly. A study co-authored by Commissioner Hales states:

> A general tenet of the project is, "This is not light rail; it's a streetcar."… Rather than regional travel, the streetcar is intended to serve short local trips. The theme of simplicity permeated every aspect of the project, not only to keep costs low, particularly in its urban setting, but also to ensure that the streetcar line blended in with the neighborhoods through which it passes. It employs small sidewalk stops, a simple track structure, an unobtrusive overhead power supply, and it has required few utility relocations.32

Another paper sounds the same theme:

> Early on, it was decided that Portland Streetcar should be integrated with every day street life, should respect the human scale of the city and should minimize disruption to the community during construction…The streetcars use existing rights-of-way, do not require separation from automobile traffic and allow on-street parking to remain…Construction staging was such that we worked in 3 block segments. From the day the contractor cut into the street to the day everything was finished was 3 weeks.33

Minimizing construction time and disruption is especially important to retail merchants whose businesses lie along the streetcar route.

Portland's approach to the streetcars themselves is also instructive. Usually, when a city needs new rail equipment, it decides what it wants, then finds someone to build it. Portland realized this approach would be very expensive, because it only needed seven streetcars (five initially and two later). Wisely, it instead chose to buy "off the shelf." It found a company that already built streetcars and took what it had to offer, with a minimum of modifications.

The company was Skoda in the Czech Republic. Skoda is an old and highly respected firm, and for decades it had built streetcars for service in central and eastern Europe. Skoda offered Portland a variant of its standard Astra streetcar design. While MAX's Light Rail Vehicles are 92 feet long (and usually run as two-car trains), Skoda's streetcar is just 67 feet long. It has doors on both sides and can be operated from either end. The car is air-conditioned, the interior is bright and open, and the middle section has a low floor, making it easy to get on and off. It can seat thirty people, and has room for 87 standees; for the short trips that are typical of streetcar travel, many people prefer to stand (big windows let even standees see out). As Portland intended, its new Skoda streetcars fit into neighborhoods rather than dominating them.

Skoda and other eastern European companies, including some in Russia, may be able to supply streetcars to other American cities, and do so at reasonable prices. The seven Skoda streetcars cost Portland $13.4 million, for a price per car just under $2 million. This is up to a third less than some modern Light Rail Vehicles cost. At the same time, it is substantially more expensive than either Vintage or Heritage streetcars. Modernity has its price, as conservatives know only too well.

Has Portland's streetcar been successful? As of this writing, it has been in operation less than one year. But in one important way, we can already say it has succeeded, because it is already affecting economic development positively.

A rail transit line's effect on development begins before the trains start to run. It begins once a firm commitment to build the line is made and the exact route is decided. At that point, developers know where and when they will have high quality public transit. They also know that once the line opens, transit is there to stay. This is a major difference from bus service, and it is the reason why rail transit has profound effects on development and bus service does not.

From the outset, the Portland Streetcar was seen as a tool for shaping development. A study notes that:

> The Portland Streetcar Project is part of the City's growth management strategy…City goals call for 15,000 new housing units and 75,000 new jobs in our urban core. The River District and North Macadam District will be the site of over half of the new housing units and one-fifth of all the new jobs. We believe that providing high density housing close to jobs and all of the amenities available in downtown is a good idea and a good deal. Portland Streetcar will be the essential transit link connecting people to their jobs, to shopping, to educational institutions and to the arts and cultural

> community…At the south end of the River District, the Brewery Blocks Development is under construction. This is a major mixed-use development on five City blocks that once housed the Blitz Weinhard Brewery…The developer sees the streetcar project as a key element in the success of their project.[34]

The Brewery Blocks Development was under construction before streetcar service began.

The day streetcar service started, July 20, 2001, the local newspaper, The Oregonian, ran a special section devoted to the new streetcar line. It, too, could already report positive effects on development:

> In Northwest Portland, already heavily developed, advertisements are appearing promoting apartments close to the streetcar line…In the West End, projects in the late planning stages include the three-block Museum Place, a mixed-use development near the Portland Art Museum, and the Mosaic condominiums. The condominium project, next to the Old Church, will have no parking…On Lovejoy Street at Northwest 11th Avenue, a building called the Streetcar Lofts is nearly completed, with units selling for $120,000 to $655,000. It will carry a neon sign blaring the message, "Go By Streetcar"…Michael Dale, who moved recently from downtown to the new Gregory condominiums, loves watching the streetcar pass his window in a way that he said he could never love looking at a bus. "It seems so attractive that you just want to ride it," he said. "You want an excuse to get on."[35]

If streetcars can have this much effect on development before they enter service, it is not reasonable to think they will have even more after service starts. Not surprisingly, Portland is already planning to extend its new streetcar line.

How much did all this cost? As we noted, Portland represents the high end of new streetcar lines, and it was not cheap. At the same time, it cost less than Light Rail, and far less than many urban freeways. Including everything – tracks, wires, streetcars and carbarn – Portland's initial 4.8 miles of streetcar lines (for a 2.4 mile loop) cost $56,925,164, for a per-mile construction cost of just under $12 million. Portland believes the streetcar line's benefits, especially in terms of downtown development and revitalization, are worth the cost.

Conclusion

Our three case studies, plus the many other examples of streetcar lines in operation or under construction across the country, offer a wide variety of models other cities and towns can emulate. One size does not fit all, but there is a right size for everyone. Your city or town, too, can do it.

And it should. That is the most important point of this study: regardless of who you are, how big you are (or how small), or where you are, a streetcar line (or larger streetcar system) would do you good. It would bring more people downtown, and people are the lifeblood of a downtown. It would both spur and channel development. It would make it easy for tourists to get around, without a car. It would help your town or city recover its own distinctive character, a character people can identify with and even love.

As conservatives, we find America's past attractive. America in the streetcar era, from around 1890 to about 1950, was a great place. Many Americans who are not conservatives know that too. Who has not wished that they could visit (and ride the streetcars) of their grandmother or great-grandmother's day?

Sadly, no one has yet invented a time machine. But people across the country are doing the next best thing: they are recovering good things from our past and bringing them to life again in the present. Historic preservation and restoration of historic buildings is going on everywhere. "Retro automobiles such as the new Volkswagen Beetle and the Chrysler PT Cruiser are selling well. Gentlemen are even starting to wear hats again.

Of all the things the past has to offer us, nothing could serve the present better than streetcars. We have no doubt that, if we could ask them, our ancestors would tell us so. In fact, we can ask a couple of them what joys the trolley car brought to their lives. In the early years of the twentieth century, two newlyweds decided that, for their honeymoon, they would journey from Delaware to Maine, all by trolley. When they got home again, they wrote a book about it. Here's what trolley riding was like back then – when the cars ran through the countryside as well as in town:

> If William Penn founded the Quaker city, God made its suburbs – a fair countryside that now passed before us in dissolving views, as our car at quickened speed plunged on to Willow Grove:
>
> "Straight mine eye hath caught new pleasures
> As the Land skip round it measures."
>
> We trolleyed past lawns and meadows, stately villas and trim gardens, old wayside inns and ivy-covered churches lodged under the spreading trees; here a classic gateway with Ionic peristyle; there an ancient mansion half-hidden behind high walls of solid masonry; a wide stretch of green fields in the foreground; a background of woodland; winding country lanes deep in shade;

and last but not least a valley sweeping northward and disclosing in far perspective green hills with a bluish haze…

"A shady road with a grassy track;
A car that follows free;
A Summer's scene at early morn;
A nickel for a fee.[36]

Yes, we can go home again – by streetcar.

Photo: W.S. Lind

A shady road with a grassy track;
A car that follows free.

Appendix I: Getting Started

OK, we've sold you. You want to see a streetcar operating in your city or town. Perhaps you are a businessman, or a local official, or a citizen activist. Your first question is likely to be, "How do I get started?"

This short guide to getting started may be helpful. We do not say it is the only way to go. But it does reflect what people in cities with streetcar lines have learned in their own successful projects.

Step #1: Find other people with the same interest and desire. You are not likely to make much progress alone, although one person can certainly get the process started. As that one person, you may find other people who are familiar with the concept and are quick to sign up. Or, you may have to start from scratch, educating other local citizens about streetcars, explaining what they are and how they can benefit your city or town. Your goal should be to form an organization of some sort – perhaps a 501(c)(3), so donations are tax-deductible – that can help design and promote your local streetcar project. This organization should not plan to go out of business once a local streetcar line is running. It will continue to have many important roles to play, from promoting the streetcar line through raising funds for its operation to providing volunteers to maintain and operate the streetcars.

Step #2: One of the things successful streetcar projects all have in common is people to fill two key roles: the "champion" and the "spear-carrier." The "Champion is someone who is a community power "player" — usually but not always a political figure — who will be the pusher and the public voice for the project. The "spear-carrier" is the man who actually gets the job done by organizing and directing the project. You need both roles filled from the beginning.

Step #3: Design a streetcar project that can garner widespread local support. That means thinking not just in terms of fellow streetcar fans, but about building a coalition. Coalitions are powerful because they bring together people with a wide variety of interests – and local political clout. Some people may be businessmen who know a streetcar line will bring them new customers. Others may be property owners, builders or developers who see a streetcar line as a development tool. Environmentalists may want streetcars to reduce automobile use and resulting air pollution. City activists may see streetcars as a way to bring new life to downtown. You want to appeal to all these groups, and as many more as you can identify. The broader your coalition, the greater your chance of realizing your project.

Step #4: When it is time to get specific about the route your streetcar will take, remember that to be successful, it has to serve a real transportation function. It should not simply be a "ride" on a streetcar for the fun of it. Your rule needs to be, "The line must take people where they want to go." Your streetcar should tie together parking lots, cultural and entertainment venues, restaurant districts and shopping districts. In short, it should serve the central business district, and serve it well (remember, Americans don't like to walk very far). And, it should be tied in with the rest of your city's or town's public transit system.

While we are strongly in favor of keeping costs down, there is a danger here you need to be aware of. Sometimes, a very inexpensive right-of-way can be available that seems to make the project easy, but that does not take people where they want to go. Don't use it! Remember, your real "product" is not streetcars but people riding streetcars. You are not building a model train layout. You are building a transportation line. If your streetcars fail to carry many people, your project will not be seen as successful. All those folks in your coalition who hoped for one effect or another from the streetcar line will be disappointed. And that means they won't support getting more streetcars – or even keeping the initial line in operation.

Of course, whatever route you select for your first streetcar line, you are almost certain to run into some NIMBYs. When you do, remember that most of these people don't know what a streetcar is or what it does. They will think it is noisy, or as big as a freight train, or that the overhead wires are dangerous, or that the streetcar will bring undesirable people into their neighborhood. None of these things are true, but they won't know that. It is up to you to show them what streetcars are really like and what they do. You may even want to take their leaders to a city that has streetcars and let them see for themselves. If you try to ignore them or run roughshod over them in the political process, you will probably fail.

Step #5: Keep it simple! With streetcars as with most things, simplicity is a virtue. Simplicity keeps down costs. Simplicity makes the project easy for ordinary people to understand and support. Simplicity ensures that once it is built, the line looks good instead of being visually intrusive. In fact, one of the best things about streetcars is that, by nature, they are simple – unless you muck it up. Most often, if it is mucked up so that your streetcar line becomes expensive and complicated, it means you have a bad advisor (there are lots of bad advisors out there). There is no shortage of the species, and you can find another one easily. If you are smart, before you hire an advisor, you will make sure that in other projects, he did keep it simple.

Step #6: Before you acquire your first Vintage streetcar or lay your first rail, you should have a plan not just for building your streetcar line, but for operating it well into the future. Here, the hard part is developing a credible funding plan. Getting money to build a streetcar line is one thing; lining up operating funds is very different. Most of the government money you may find for building the line is not available for operating costs. Operating funds will almost certainly have to be local money, and you will need credible, long-term commitments. Remember, it will probably take time for ridership to build and businesses to benefit from the new line. Enthusiasm alone is not enough; you need legally binding commitments, on paper.

Step #7: You also need a solid plan for recruiting, employing and retaining volunteers. As our study has made clear, volunteer labor can be a great asset to a streetcar line. But employing volunteers is not as easy as it sounds. People who say, "Yea, sure, I'll volunteer," don't necessarily show up, or keep showing up, when and where they are needed. Often, the most important work is hard, dirty or boring. As with operating funds, you need a credible plan, based on experience elsewhere, that will carry you beyond construction and into years of operations. Places like McKinney Avenue and good streetcar and train museums can help. Talk to them.

In fact, in everything, from the first day you decide to try to get streetcars running in your city or town, talk to people who have already done it successfully. Their successes (and their mistakes along the way) are almost certainly your best guide. Don't reinvent the (trolley) wheel. As Bismarck said, "Only a fool learns from his own mistakes. A wise man learns from the mistakes of others." And not just from others' mistakes, but also from what they did right. Enough streetcar lines are operating now to build a base of experience. Learn from it. Appendix III suggests a few places to start looking for it.

Appendix II: The Gomaco Trolley Company

Where does one go, in the early years of the 21st century, to buy a Heritage streetcar? In the early 20th century, builders abounded: Jewett, Niles, Kuhlmann, Brill and many more. Fortunately, while those great companies are gone, streetcars are still made in America, by the Gomaco Trolley Company in Ida Grove, Iowa.

Photo: Gomaco Trolley Company

A Gomaco Trolley built for Tampa, Florida

Gomaco, a long-established builder of heavy equipment, got into the business of manufacturing Heritage streetcars in 1982. The Department of the Interior had decided to create an urban park in America's first manufacturing city, Lowell, Massachusetts. It wanted historically accurate streetcars to provide historically accurate local transportation. Gomaco built two, open-sided streetcars for Lowell, both replicas of Brill cars of 1902 that ran in Massachusetts. It later built a third closed car for Lowell, a replica of a 1912 streetcar.

Since that initial order for Lowell, Gomaco has built replica streetcars for Portland, Oregon and Tampa, Florida. It has also reconditioned Vintage streetcars from Melbourne, Australia and Milan, Italy; it currently has some of the latter, built to the famous Peter Witt design, for sale.

Gomaco has earned a deserved reputation for historical accuracy and high quality craftsmanship. The company says,

> Our craftsmanship matches the precision and quality of yesterday and incorporates the engineering technology of today…The goal is to keep the trolley cars as authentic as possible and to match the quality workmanship that went into the trolleys of the past…Gomaco Trolley Company builds brass parts to meet all standard trolley requirements…If you are in need of a special part, Gomaco will make a die and build exactly what you need…Exact replicas (of streetcars) can be built based on trolley photos.[37]

In other words, if you want your city or town to have once again the same kind of streetcars that ran there in the past, all you need is some photographs of those cars. Gomaco will build new streetcars just like the old ones.

Gomaco is now the only commercial source for Heritage streetcars (New Orleans builds its own), and it is a good place to start your search. Mr. John Kallin is Gomaco's sales manager, and you may write to him at the Gomaco Trolley Company, 119 E. Highway 175, P.O. Box 151, Ida Grove, Iowa, 51445 or call (712) 364-3347. Gomaco has a web site at www.gomacotrolley.com. A directory and Internet links for other rail car manufacturers, including any companies that began making Heritage streetcars after publication of this report, can be found on the American Public Transportation Association web site at www.apta.com under the heading "Vehicles and System Technology Web Sites."

Appendix III: Resources

Beyond this study, there are a number of other useful places to go for information on streetcars. The American Public Transportation Association (APTA), the underwriter of this study, has established a Heritage Trolley Task Force. The task force is in turn hosted by America's oldest streetcar museum, the Seashore Trolley Museum in Kennebunkport, Maine. APTA's Heritage Trolley Task Force has a web site, which you can locate at www.heritagetrolley.org. You may contact its Chairman, Mr. Jim Graebner (who is also a consultant on streetcars, and a good one), at (303) 628-5510. And you may reach the Seashore Trolley Museum at (207) 967-2712.

Streetcar museums are often an excellent source of expertise. While museum operations differ somewhat from the operation of a regular streetcar line, museums have the great virtue of knowing how to do things cheaply (because they usually don't have very much money). They can also be helpful in locating (and sometimes providing) Vintage streetcars that used to run in your city, or models or plans from which new streetcars can be built to the old designs. Often, they are also sources for volunteers. Most states have at least one streetcar museum. A good guide to the streetcar museums of North America is Veteran & Vintage Transit by Andrew D. Young (Archway Publishing, St. Louis, MO, 1997).

Notes

1. "History Repeats Itself," by William D. Middleton, Railway Age, May, 2001, p. 45

2. Smithsonian, February, 1993, taken from "Other Voices and Links," Cincinnati Street Railway web site at http://isoservices.com/CSR-Org/voices.htm

3. ibid.

4. This table was inspired by a similar one in Transportation Research Record No. 1361, Light Rail Transit, "Vintage Trolleys: A National Overview" by S. David Phraner (Transportation Research Board, National Academy Press, Washington, D.C., 1992) Table 4 on p. 326

5. Middleton, op. cit., p. 47

6. "New Life for Old Trolleys," by Frank J. Prila, New York Times, December 9, 2001

7. Mass Transit, May/June 1993, taken from "Other Voices and Links," Cincinnati Street Railway web site at http://isoservices.com/CSR-Org/voices.htm

8. "Vintage Trolleys on San Francisco's F Line: A West Coast Perspective," by Paul M. Weyrich and William S. Lind, The New New Electric Railway Journal, on Free Congress Foundation web site at http://www.freecongress.org/fcf/, March 2000

9. Above figures from Middleton, op. cit., 46-52

10. Vintage Trolley web site at http://www.railwaypreservation.com/vintagetrolley/vintagetrolley.htm, April 6, 2001

11. Calculated by APTA from 1996 National Transit Database data, December 17, 1998

12. For a refutation of Cox and company, see Twelve Anti-Transit Myths: A Conservative Critique by Paul M. Weyrich and William S. Lind, Free Congress Foundation, Washington, D.C., 2001

13. "McKinney Avenue Transit Authority Experience," by Frank A. Schultz III and John B. McCall, Transportation Research Record No. 1361, Light Rail Transit (Transportation Research Board, National Academy Press, Washington, D.C., 1992) p. 349

14. ibid., p. 350

15. ibid., p. 351

16. ibid., p. 352

17. ibid., p. 350

18. ibid., p. 354

19. ibid., p. 354

20. Information from MATA, February 5, 2002.

21. Memphis Trolley System: Transportation Link and Development Tool, by Thomas D. Fox, paper presented at the 8th Joint Conference on Light Rail Transit, Nov. 11-15, 2000, Dallas, Texas, p. 2

22. ibid., p. 6

23. ibid., p. 8

24. ibid., p. 8

25. ibid., p. 2

26. ibid., p. 6

27. ibid., p. 5 and 6

28. op. cit., APTA memo, attachment 4

29. op. cit., Fox, p. 10

30. Information provided to authors by MATA

31. Portland Streetcar Project Elements, March, 2001, unpublished paper, p. 1

32. Portland Central City Streetcar Line, by Charles Hales and Thomas B. Furmaniak, paper presented to the 8th Joint Conference on Light Rail Transit, Nov. 11-15, 2000, Dallas, Texas, p. 1

33. op. cit., Portland Streetcar Project Elements, p. 2

34. Portland Streetcar Project, City of Portland Office of Transportation, March, 2001, p. 2-3

35. "Back on Track," special section in The Oregonian, article "Streetcar of Dreams" by Gordon Oliver, July 20, 2001, p. 4

36. A Trolley Honeymoon from Delaware to Maine, by Clinton W. Lucas (The M.W. Hazen Company, New York, (no date)) pp. 21-22, 60

37. Material from Gomaco Trolley Company web site at www.gomacotrolley.com, April 5, 2001

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