# The Future of Mass Transit in the United States: Can We Get There From Here?

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For many decades, the future of transit in the United States has suffered from failure to address an extremely important issue: What is the purpose of mass transit? What is transit supposed to accomplish?

As the old saying goes, if you don't know where you're going, then any road will get you there. Because there is not a commonly accepted concept of the purpose of mass transit in this nation, either on a national, state, regional, or local basis, there has been a failure to develop and implement proper plans for transit agencies and related governmental units to accomplish this purpose.

To illustrate the results of this lack of purpose in transit planning, let us first examine recent transit projects in San Antonio and Los Angeles. (For a more in-depth look including Las Vegas and Atlanta case studies, see the extended version of this paper at www.tppf.org.)

## SAN ANTONIO[1]

The Board of VIA Metropolitan Transit in San Antonio recently placed a ¼¢ sales tax referendum before its constituents to fund an enhanced transit system, principally a 53.47 mile, three-line light rail system. While the sales tax referendum was defeated by a 70%-30% margin, certain factors in the light rail plan provide a look into common practices in the national debate on transit mode decision-making practices.

Proponents of light rail in San Antonio followed a common pattern in their marketing plan presented to the voters. Proponents were faced with the usual challenge: developing a transportation mode that would appear to provide significant improvements to transportation system users, ensuring geographic coverage broad enough to attract votes from most physical sectors, while keeping costs low enough to not offend financial sensitivities. As is often the case, this presented major problems. Subsequently, the costs per mile of the proposed system were projected at $26.48 million per mile, down 49% from $44.45 million in the prior plan. This cost was only 38% of the average cost of the light rail systems presented to the federal government for funding in that year and was lower than any of the thirteen competing projects.

When this low cost was utilized to attack the feasibility of the plan, the response was to repeatedly state that the plan was practical, largely because of the low cost of construction in San Antonio. However, several questionable items were found when the detailed financial plan was produced. For example, it was found

[1] All data drawn from Texas Public Policy Foundation, Wendell Cox and Thomas A. Rubin, *Trolley Folly – A Feasibility Analysis of VIA's Light Rail Plan*, April 2000.

that the cost of light rail vehicles was slightly under $1.1 million each – less than one-third of the actual market cost. The rail proponents responded that the figure was correct because the plan anticipated using a small-sized rail car, currently planned for use in Portland, Oregon, that cost only $1.3 million.

This gambit was evidently not entirely successful. First, the actual cost of the Portland car for use in San Antonio would be above $1.3 million, probably in the $1.5-1.7 million range. Second, it was never explained how the plan anticipated using rail cars that cost $1.3 million, but the plan provided for less than $1.1 million for each car. Third, the cars were so small that they had less passenger carrying capacity than a standard 40-foot transit bus – approximately 32 seats on the rail cars vs. 43 on buses – and the operating plan called for single car trains on at least one, and probably two, of the three light rail lines, with ten minute headways. In other words, if the proponents recovery attempts were to be believed, San Antonio voters were being asked to spend $1.4 billion for a light rail system that would require over two decades to implement and, when completed, would have significantly less passenger carrying capacity than many existing VIA bus lines, with little or no speed advantage.

VIA's credibility was also considerably hurt by an 87.5% increase in transit fares that it had implemented at the beginning of its 1996 fiscal year, from 40¢ to 75¢. The reason for this increase – perhaps the largest one-time percentage increase in recent U.S. transit history – was said to be lack of fiscal resources. When it was shown that VIA had cash balances equal to a full year's worth of operating costs, the Board lost great credibility – and the transit-dependent voters of San Antonio proved to have a long memory.

This fare increase did save VIA considerably on its operating costs; total operating subsidies went down $6.66 million, or 13.3%, from FY95 to FY96. However, annual ridership fell 9.58 million, or 20.2%, a huge one-year loss of ridership.

The loss of 9.58 million riders from the fare increase was interesting when compared to the projected ridership of the light rail system – going up in stages with the four components of the light rail system, adding 4.37 million in 2008, 8.04 million in 2013, 12.72 million in 2018, and finally 16.21 million in 2021. In other words, the ridership from massive spending on light rail would not exceed the ridership lost from the fare increase until 18 years into the plan. Even when all the lines were completed, the gain from light rail would only be about 69% higher than what was lost by the inopportune fare increase in a single year. Since generally two-thirds of light rail riders in the U.S. are former bus riders, the net positive impact of light rail was obviously questionable.

While one of the benefits widely touted for light rail was a reduction in road congestion, an analysis of Texas Department of Transportation (TxDOT) and VIA's own model runs showed that, compared to the "no-build" alternative, light rail would reduce auto usage by only 0.4% – or considerably less than a bad flu day would generate. While it is rare for light rail to have any significant impact on traffic congestion, in San Antonio, where the main problem area was east-west traffic north of the central business district (CBD), it would be particularly difficult for north-south light rail lines to have much impact.

The already shaky prospect for the success of the light rail tax vote was further diminished when the League of United Latin American Citizens (LULAC) and the Texas Justice

Foundation (TJF) filed a lawsuit against VIA for improperly utilizing tax dollars for political purposes. The Court entered a temporary and then permanent injunction against VIA prohibiting publicity that was deemed to be advocating the passage of a political measure.

In summary, the combination of a very poor plan and determined opposition led to the most overwhelming defeat of a rail tax plan in U.S. history.

## LOS ANGELES

As this paper is being completed, the latest, and almost undoubtedly final, segment of the Red Line subway is being opened to service to the San Fernando Valley (Los Angeles). It is interesting to trace the history of cost and ridership projections for this line:

- The first official projections, in 1983, were 376,000 boardings a day (working weekdays) in the year 2000 on an 18.6 mile system for a total capital cost of $2.352 billion (1983 dollars).[2] These are the principal benefits and costs that were utilized to sell the project to the local authorities and State and federal funding partners.

  As is common in the industry, following approval of the project, the Los Angeles County Metropolitan Transit Authority (MTA) began revising its ridership projections downward and its cost projections upward.

- In May of 2000, MTA made its final pre-opening projection of 80,000 daily boardings after terminating the express bus lines in the corridor which had the effect of boosting ridership on the light rail line.[3]

- MTA's final "admitted" cost projection for the full Red Line (*not* including various planning and design studies and related work for Red Line sections that have now been abandoned) is approximately $4.503 billion (in 1993 dollars).[4]

Therefore, we have seen the ridership on this line fall from the 376,000 projected, that was used to justify it to the public and funding partners, to 80,000 persons, a falloff of 79%.[5]

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[2] U.S. Department of Transportation (U.S. DOT) Urban Mass Transportation Administration (UMTA)/Southern California Rapid Transit District (SCRTD), *Draft Environmental Impact Statement and Environmental Impact Report – Los Angeles Rapid Transit Project – Metro Rail*, June 1983, pages S-6 and S-7.

[3] MTA, *Proposed Budget For the Fiscal Year Ending June 30, 2001*, Appendix 5: FY01 Modal Operating Statistics," shows Heavy Rail (Red Line) boardings of 24,952,000 for the year. Converting this annual figure to one for working weekdays by utilizing the 313.243 annual: working weekday ratio calculated from MTA, 1999 National Transit Database report to Federal Transit Administration (FTA), Form 406 HR DO (Transit Agency Service – Heavy Rail – Directly Operated) produces 79,657.

[4] MTA, *MTA Metro Construction – Executive Report – Rail Program Status*, January 1999, "Executive Summary – Rail Program Status as of January 1999, page 1, sum of "MTA Approved Budget" for Red Line Segments 1, 2, and 3 North. This does not include $151 million of "Expenditures to Date" for Red Line Segments 3 Mid-city and East Side, which have been more-or-less canceled due to a popular vote to forbid spending funds on subways in November 1998 (Proposition A, not to be confused with the 1980 Proposition A that established the first ½¢ transit sales tax in Los Angeles County).

[5] However, in making these comparisons, it should be remembered that the 1983 projections were made on the basis of a "zone" fare structure that would

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Of course, the 80,000 projection appears to be a classic "lowball" projection that will allow MTA to gleefully exclaim that ridership exceeds expectations if it comes in, for example, at 90,000 or 100,000. Given that the Hollywood/Vine ridership was 60,000 prior to the opening of the North Hollywood segment, the riders from canceled express bus lines alone should bring the North Hollywood ridership to approximately 80,000. There is a long history of such a pattern of ridership projections, both at MTA and throughout the transit industry.

Going back to the original 1983 projected capital cost of $2.352 billion, and converting it to 1993 dollars to be comparable to the $5.5-$6.0 billion actual cost, we get $3.349 billion,[6] so the total capital cost increased over 70% from the original projection. On an inflation-adjusted cost per mile basis (1993 dollars), it almost exactly doubled from approximately $180 million to approximately $360 million.

The Red Line was built at twice the cost per mile and attracted 21% of the projected ridership – not exactly a record to be proud of.

## WHAT IS TRANSIT'S MISSION?

The mission of transit is *to maximize the mobility of people*, with specific emphasis on the provision of transportation for residents who do not have other transportation options. Transit professionals often break transit users into two groups, the "transit-dependent" and "choice" riders. Choice riders, by definition, have access to an automobile for the specific trip under discussion and the ability to use it. Transit-dependent riders, on the other hand, either cannot drive due to age, physical condition, or other factors; do not own or have access to an automobile for this particular trip; or cannot afford to use their automobile for this particular trip. In the real world, there are many shades between "pure" transit-dependent and "pure" choice riders, where the availability, quality, and price of transit can make a

[5](...continued)
have included higher charges for longer trips, such as from the Valley to the CBD, while the actual fare structure is "flat," with no zone charges. In fact, MTA has even provided for free transfers from the bus lines that were terminated to force riders on to the Red Line. If these lower fares were included in the early ridership projections, undoubtedly the ridership projection would have been considerably higher.
As to costs, MTA has utilized a variety of techniques to minimize the reported costs of its Red Line expenditures in violation of both Generally Accepted Accounting Principles (GAAP) and California State Statutes (California Public Utilities Code § 130513), including: not including capitalized interest on funds borrowed for construction purposes prior to revenue operations, ignoring many direct costs by not including them as project costs, not allocating many indirect costs (contract audit, accounting and finance, human resources, procurement and stores etc.) required for the project as project costs, not counting many planning and design costs (including those for canceled Red Line segments), and pretending that certain other costs will not exist, such as the public liability/property damage costs for the extensive problems caused by the Hollywood Boulevard sinkhole and related construction problems. In fact, the differences are so extensive that, instead of GAAP, MTA is utilizing what financial accountants may refer to as "Completely Rejected Accounting Principles." All in all, I calculate the actual costs of the Red Line as well in excess of $5.5 billion and perhaps exceeding $6 billion (current year of expenditure dollars).

[6] MTA claims that the construction cost index for its projects is approximately 82% of the Consumer Price Index (MTA, *A Plan for Los Angeles County – Transportation for the 21st Century*, Adopted March 1995, page 114). The CPI (Urban) for greater Los Angeles was 99.1 for 1983 and 150.3 for 1994 (U.S. Department of Labor, Bureau of Labor Statistics), an increase of 51.7%. 82% of this is 42.4%.

significant difference in decisions, including, in some cases, the decision to buy a car or not.

**Reducing Traffic Congestion**

There are a large number of things that transit *cannot* do. It cannot relieve traffic congestion because it simply does not carry enough people to have an impact in all but a few areas. For example, in most urbanized areas, if it were somehow possible to reverse the decades-long reduction in transit market share and double transit usage over the next decade, the percentage of drivers taken off the road would be only a small fraction of the *increase* in population and congestion.

**Reducing Air Quality Problems**

Transit is also not very effective at reducing air quality problems. As stated above, when transit's market share is in the low single digit range, there is not much impact that can be measured. Also, trying to clean the air by encouraging choice riders to use transit is a fool's errand – their cars are generally so clean already that the marginal impact to air quality is minimal. In fact, the only demonstrable way that transit can have an impact on air quality is by providing more services to the marginally transit-dependent, in order to lessen the usage of older, very dirty vehicles that emit 100 or even 1,000 times more pollutants than more modern, well-tuned cars.

**Can transit "shape cities?"**

By itself, no. By coordination with the application of zoning and tax abatements, certain small development effects may be possible over periods of decades. However, such cooperation in the U.S. is very rare and, very few real world people appear interested in living in the densified, transit oriented cities that are so popular with many urban planners.

**Can Transit Create Jobs? Can It Stimulate the Local Economy?**

Well, to some extent. However, *operating* transit systems have far more effect, especially locally, than capital projects. First, since operations generate revenues in the form of fares, advertising, etc., it takes fewer taxpayer dollars to create a dollar of expenditures for operations than for capital. Second, *building* a transit system doesn't take anyone to a job, to school, to shopping, or to recreation, only *operating* a transit system does. Third, a very high percentage of the costs of operating transit systems stays in the local area. However, the majority of the costs of capital improvements are spent outside of the local area, and many expenditures, such as purchase of new rail cars, are outside the U.S. borders.

However, it must be remembered that most of the funds that are spent on transit are what are known to economists as "transfer payments," or, in lay terms, your tax dollars. How many taxpayers believe that their governments are better at spending, or investing, their dollars than they are?

**What Transit *Can* Do**

What transit *can* do is provide transit for the transit-dependent. If certain choice riders wish to use transit, well, good for them, and we certainly shouldn't push them away. However, the dirty little secret of transit is that it costs far more to carry a choice rider than a transit-dependent rider, because unless the choice rider is given absolutely everything he/she wants in a transit system, he/she will, by definition, make a choice and not use transit. In order to attract a choice rider, he/she must be presented with a transit option that goes from where he/she is to where he/she wants to go, when he/she wants to go, at a high speed of travel, with high trip frequency, in a comfortable environment, with very high reliability, with a minimum of

transfers-preferably none, with high actual and perceived safety, with the "proper" level of status commensurate with the choice riders view of his/her position in the world, and, at low cost. Unless the transit option scores at least minimum levels of quality on all of these criteria, with at least one of the criterion being significantly better than the single passenger auto or other option, it is extremely easy for the choice rider to elect to use his/her automobile. Since transit-dependent riders use transit for non-work trips during non-peak hours, many of these trips are relatively inexpensive to provide, while choice riders utilize transit almost exclusively for home-to-work trips, the most expensive trips for transit operators (with the possible exception of adding special trips to sporting and cultural events). Since choice riders generally tend to have longer home-to-work commutes than do transit-dependent riders, their trips are generally more expensive to provide than transit-dependent home-to-work trips; first, because long-haul commuter express trips generally have far fewer standees than local trips, and second, because these long-haul suburban trips are extremely difficult to link with other transit trips. Therefore, if a choice must be made between service to transit-dependent and choice riders, the decision must err strongly on the side of transit for the transit-dependent and marginally transit-dependent. First, these riders, by definition, have few, if any, options and second, far more transit-dependent riders can be carried for the same number of taxpayer dollars than can choice riders. Why should taxpayer dollars be spent to attract people to transit who really are not all that interested in using it when there are so many people who truly need improvements to their mobility? It is not that the desires for transit improvements for transit-dependent riders are that much different from those of choice riders, it is just that transit-dependent riders do not have much choice but to continue to use transit, no matter how difficult the access, how poor the quality of service, and how expensive the fare.

## A BRIGHT FUTURE FOR MASS TRANSIT: BETTER BUS ALTERNATIVES

In almost all cases, improved bus transit services can be, at a minimum, extremely competitive with rail transit alternatives and bus is frequently a clear and convincing winner in any fair competition. The key word here is "fair," because many such modal competitions are stacked against all but the preselected winner, which is virtually always rail transit. (See for example, John F. Kain, "The Use of Straw Men in the Economic Evaluation of Rail Transport Projects," *Transportation Economics*, Vol. 12, No. 2, for a discussion of how the Metropolitan Transit Authority of Harris County [Houston, Texas] developed a sub-optimal bus plan to compare to the favored rail plan, and how the rankings were reversed by specifying a "Better Bus" alternative.)

Bus transit has several advantages over rail modes:

- Bus capital costs are generally a small fraction of rail costs.
- Bus operating costs and subsidies are generally extremely competitive with rail.
- Bus and rail travel speeds are comparable in similar operating environments; that is, street-running light rail speeds are comparable to standard urban bus speeds when the distances between stops are similar; separated guideway rail and bus also operate at roughly similar speeds. In the case of long-haul commuter express type service over dedicated guideways, buses are often

significantly faster if their guideway has "off-line" stops, which allow express and skip-stop service, which rail service rarely accommodates.

- Bus systems can generally be significantly improved in less than two years from a start date, the time required to procure buses and hire and train additional operators and mechanics. Even bus system improvements that include dedicated rights-of-way, such as Busway/high occupancy vehicle (HOV) lanes and bus transit malls, can generally be implemented within a few additional years. Rail lines often take more than ten years to reach revenue operation.

- Bus is a far more flexible mode and can reach far more trip origins and destinations than can any rail system. Indeed, without bus, most rail lines would be total failures because there are not enough travelers within walking distance, or who have access to rail stations by other means.

- Because of its flexibility, if an error is made in planning and implementing a bus system, it is generally fairly easy and inexpensive to correct. If, for example, more buses than are needed are assigned to a bus line, it is easy to shift them to other routes where there is a greater need. Conversely, if more service is needed to a localized area, bus systems can easily accommodate increased demand. It is also far easier to implement dedicated rubber tire guideways in small segments, unlike rail guideways, where there is a huge up-front commitment to minimum operable segments before any service is begun. Most rail modes require electrical power systems.

- The proper use of busways allows the combination of collector bus service through neighborhoods and high-speed service over long hauls to a central business district. By having interchange stations on the guideway, allowing transfers to buses going to different destinations, bus transit can allow riders to complete trips that would require two or three vehicles, including a rail vehicle, with only one or two buses. Transfers are one of the greatest difficulties in attracting riders to transit, so avoiding or minimizing transfers is a very significant advantage.

**Operating Costs of Bus and Rail**

Rail proponents frequently show the costs of bus and rail modes in the same city to "prove" that rail has lower operating costs. It is certainly true that when the analysis is done by comparing system-wide bus and rail costs, rail costs are generally somewhat lower on a per passenger and per passenger mile basis. For example, according to the American Public Transportation Association Public Transit Fact Book 2000, Tables 79 and 90, all U.S. transit operators in 1998 reported the following data:

| | Bus | Light Rail |
|---|---|---|
| Cost/Passenger | $2.05 | $1.83 |
| Cost/Passenger-Mile | .54 | .45 |
| Subsidy/Passenger | 1.36 | 1.28 |
| Subsidy/Passenger-Mile | .36 | .31 |

From these data, light rail holds a clear, although not very large, advantage in all performance indicators.

However, this is an incomplete representation of the true costs of light rail and bus systems. First, because light rail is so expensive to construct, it is generally only utilized on the most heavily utilized transit routes. Therefore, all light rail lines in the population are productive, cost effective, high use lines, while the bus data is for all types of lines, including many that are used little and are

expensive to operate. Indeed, not only does bus have to yield the most productive lines to rail, but bus feeder/distributor routes to rail stations are generally some of the least productive lines in the system.

There is generally a great range of performance results for bus lines in a specific system. For example, for the Los Angeles County Metropolitan Transportation Authority's 125 bus lines, the average subsidy per passenger was $1.07 in fiscal year 1997, but subsidies per passenger by bus line ranged from a low of 43¢ to a high of $16.36. Over 20% of the passengers had a subsidy under 80¢ and over 10% had a subsidy under 60¢. Where there is high utilization of bus service, subsidies drop very significantly as the costs are spread over more passengers.

The big factor, however, is that the above comparison does not include capital costs. Since capital costs are generally only 10% to 30% of total costs of bus service, as compared to 70% to 90% of the total costs of an urban rail service, this omission is crucial in bus-rail comparisons– and the omission must not be accepted.

The only truly valid way to compare the costs of bus and rail transit along a specific transit corridor is to test, or model, the costs for these modes in that specific corridor, using similar and valid assumptions regarding operations.

There are a variety of techniques that can be of great assistance in customizing rubber-tire transit to specific local transportation requirements, including:

- Express bus service from suburbs to central business districts, and from low-income housing areas to suburban jobs, particularly on HOV lanes and/or dedicated busways that can greatly speed travel times
- Timed-transfer bus operations in less densely populated areas, where all buses meet at the same place, allowing transfers between all routes (similar to airline hub-and-spoke operations)
- Bus transit malls, such as the highly successful ones in Portland and Denver, where buses operate with very high frequencies through high-density retail, commercial, cultural, and entertainment districts on dedicated streets or bus lanes with extensive pedestrian amenities, often free to all users
- Busways and HOV lanes that can be combined with high occupancy toll (HOT) lanes, allowing single occupancy auto drivers to access the "fast lane" for a fee, thereby providing a significant new source of funding for surface transportation improvements
- Use of competitive contracting for transit service, including encouraging the existing transit operator and its labor unions to "sharpen its pencil" and cut operating costs
- Use of smaller transit vehicles at higher frequencies of service in areas where demand for transit does not require full-size buses
- Encouragement of private and "entrepreneurial" transit options, such as jitneys, "club buses" (employer-sponsored bus transit service), and other innovative modes to free up public funds for other uses
- Employer-subsidized bus transit passes and other fare reduction programs
- "Guaranteed ride home" programs for potential transit users who are worried about responding to family emergencies

- Encouragement of increased transit utilization by significant fare reductions

Transit is only part in the overall surface transportation system, which is of course dominated by automobiles. The best transit plans will be carefully integrated with the overall surface transportation plans.

## DEDICATED FUNDING

One of the arguments that is most often heard for rail is that there are huge funding sources that are available for rail that cannot be utilized for any other purpose. For example, over the past decade, it is often asserted that the Federal Section 5309 "New Rail Starts" program will provide up to 75% of the cost of building new rail lines.

The problem with this is that there is *no* federal "New Rail Starts" grant funding program. There is a "New Starts" program, and it is one of the biggest federal grant programs, with 40% of the total discretionary funding for major urbanized areas (UZA), but it is not in any way exclusive to rail. It can and has been utilized for major rubber tire transportation programs, such as providing a half billion dollars of funding for Houston's busway/HOV program. Similarly, what used to be known as "Rail Modernization," encompassing another 40% of the discretionary funding, is now "Fixed Guideway Modernization," and can and is being used for "rubber tire" guideways, bus purchases, and similar non-rail projects.

In fact, there is actually more federal funding usable for bus than for rail. The other 20% of major UZA discretionary funding is dedicated to bus and cannot be utilized for rail.

It is true that far more of the "New Starts" and "Fixed Guideway Modernization" funds have gone for rail projects than for bus projects. However, the reason is not that the law does not allow bus projects, or even that it favors rail projects. Rather, the underlying reason is simply that because the proposed grantee must ask for funds for a specific purpose, most grantees ask for funding for rail projects.

There are a number of state and local funding sources that are dedicated for rail, or give preference for rail projects. These are a function of the sponsors of the funding programs writing the language to include these restrictions. This is not in any way evidence that rail projects are better than bus projects, only that there is, at times, more campaign funding available to support rail *taxes* than for bus taxes, namely because there are many major contractors, suppliers, and consultants that stand to make far more money from very large rail construction projects than from bus projects. In these situations, the legal restrictions were put there by passage of laws and/or referendums and initiatives, and they can be changed in the same way, if the public is willing to push for such change.

## NEW RAIL CONSTRUCTION – A PRODUCT OF A FAILED SYLLOGISM?

After considering the above, some readers may be asking, why is there such a great desire to build rail in so many U.S. cities? Some of the reason may be found in a surprising simple explanation – a faulty syllogism.

Syllogisms, the reader may recall, are those three-step logic things we all learned in high school – you know, "If A, then B: if B, then C; therefore, If A, then C." The specific syllogism that leads to rail construction can be stated as follows:

***If we do nothing, things will get worse.***
***Building rail is doing something.***
***Therefore, we must build rail.***

If one doesn't look too closely, this sounds good. After all, in almost every city of any size at all, transportation is certainly getting worse. Travel times are going up, delays lead to air quality problems, people can't get to their jobs, goods can't get to where they need to go, etc. This is bad, we don't like bad things, therefore we must do whatever we can to try to keep things from getting worse.

It is most definitely *not* sufficient to justify building a rail line by concluding that things will get worse if nothing is done. In order to justify building a rail line, it must *first* be shown that building a rail line *will make things get better*. However, this is a necessary, not a sufficient, condition. To justify building a rail line, it not only must be shown that building the rail line will make things get better, but that building a rail line will do a better job of making things better than other available options, *and* that the costs and benefits of building the rail line (with the understanding that, for these purposes, "costs" and "benefits" should be interpreted in a very broad sense, including, but not limited to, monetary factors) meet acceptable standards.

In my opinion, it has not been demonstrated that many of the rail lines recently constructed, now under construction, or proposed for construction in the United States meet the second and third tests above – and there are many examples of how badly these tests are failed. Indeed, several of the rail lines proposed have not even been shown to have met the first test. For many of these lines, the proponents' models show total transit usage *declining* after the rail lines are implemented, after expenditures of hundreds of millions or billions of dollars, making it difficult to determine why they were ever seriously considered at all.

Many local rail proponents become enamored with a specific fancy transportation technology, or believe that "we need rail to be a world class city." These types of solutions looking for problems to solve are bound to fail, as has been proven many times over. Similarly, those that are attracted by what they are told of huge piles of federal funds that will finance the project do not understand the size of the waiting list for such projects, the huge local funds required, and that federal funds are generally available for non-rail transit projects that would provide far greater benefits at far lower cost.

## HOW *SHOULD* TRANSIT CAPITAL DECISIONS BE MADE?

For many years, the U.S. Department of Transportation/Federal Transit Administration (FTA) has promulgated a very fine decision methodology which is now part of the Major Investment Study and related requirements. When properly utilized, this procedure will compare several options for each proposed transit corridor – for example, light rail against a busway or dedicated bus lanes vs. an HOV lane vs. Transit Systems Management (low capital cost improvements to existing systems), and the "no build" option, considering costs and benefits in both monetary and other measures, and evaluating each option in a fair and consistent manner against pre-established evaluation criteria. However, like all tools, the quality of the finished product depends upon how the tool is used.

It is extremely simple to make various assumptions that will produce a pre-selected result. Examples of this type of butcher's thumb on scale, all of which have been utilized in recent rail transit project justification studies,

include:

- Assuming that potential passengers will walk one mile to ride a train, but only one-quarter mile to catch a bus
- Assuming that future real estate expansion will be centered only around rail stations
- Performing an analysis of only the favored rail proposal, rather than presenting any meaningful alternatives
- Assuming that rail vehicles will travel at speeds higher than can reasonably be obtained
- Assuming that the "transfer penalty" (loss of ridership caused by passengers who dislike transfers) is very small
- Assuming steep future increases in fuel and parking costs and/or major parking restrictions
- Assuming high-speed arterial bus lanes perpendicular to rail lines that will allow passengers to reach rail stations much faster, but no such lanes that are parallel to the rail lines, which would compete for passengers
- Assuming that major bus lines will be terminated when rail operations begin, forcing transit users to transfer to rail – even when the bus line is much faster
- Assuming rail fares that are much cheaper than bus fares

How can this type of pre-determined-results study be avoided? The local community must insist that its transit agency conduct an honest evaluation in the clearest and most powerful manner. Even then, because of the complexity of the modeling process, there are very few transit agency Board members who have the technical knowledge, or the time, to be able to do their own verification of the validity of the results. An outside, independent evaluator is highly recommended. However, the key is "independent." Many of the people who have the necessary knowledge often have an interest in seeing large-scale capital projects approved.

Many poor transit guideway projects are justified by their "secondary" benefits, such as job creation, traffic congestion relief, environmental impact, "building better cities," etc. These should be given very little weight in the final analysis. As discussed above, transit generally has very little significant impact in these areas and, to the extent that such impact does exist, it is almost directly proportional to the number of passengers carried. Therefore, putting the major weight on the key characteristic of transit – moving as many people as possible as fast as possible at the least possible public sector subsidy – will incorporate these other considerations quite well.

Another key is community involvement, early, often, and continuously. The people who will be using the proposed transit system should be present at the creation, providing their unique perspective on what is needed.

## AN ENDING NOTE

Several months ago, I was attending a public hearing that was considering transit guideway options for some specific corridors in a major city. The options being presented included a type of Rapid Bus and light rail. One of the speakers got up and stated, "I don't care how good you say this new type of bus service is going to be, if you want to get me out of my car, you're going to have to give me my rail line. There is nothing on Earth that is going to get me on a bus."

I spoke a few minutes later. I first pointed out that the proposed Rapid Bus system would be about 5% to 10% faster for her, origin to destination, and that it could be up and running in no more than two years, vs. at least ten years for light rail. Then I pointed out that the high cost of light rail meant that the subsidy per passenger would be at least three times, and more likely five times, higher. At this point, she broke in to my presentation and yelled, "I don't care what you say, if I don't get my rail line, I won't take transit!"

I turned to her and said, "Madam, if the choice is, carrying you or carrying five other people, who desperately need transit because they don't have any other transportation options, then I hope you enjoy your drive."

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