

# **The “New Clothes” of the Libertarian Critics of Light Rail Transit: Lessons from Cincinnati**

**“You have to understand that being anti-rail is the libertarian's raison d'etre. As the Flat Earth Society members can never admit the world is round, they can never abandon their core belief, all experience to the contrary.”**

**Comment made by anti-rail activist to transit official in Denver, Colorado.**

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It is said that when you cannot understand why people take the positions on issues they do, it is usually for at least one of three reasons: ideology, money or sex. In the case of the various light rail transit critics around the nation, mostly associated with libertarian institutes, ideology certainly is involved, and given their general unwillingness to reveal the sources of their funding for their unbridled and irrational enthusiasm for highway based transport policies, it is an easy conclusion that money quite likely is involved as well. These groups cling tenaciously to defending and promoting unfettered auto use, even in the presence of considerable criticism of the vacuous nature of their arguments. As Upton Sinclair once quipped, it is difficult to get a man to understand something when his income depends on his not understanding it.

Such seems to be the situation with the many libertarian tirades against light rail investments across the nation. These critics may be nominally independent, such as Wendell Cox (who won't reveal his funding sources), be associated with various institutes, as Samuel Staley of the Buckeye Institute in Ohio and the Reason Foundation in California, and Randall O'Toole of the Independence Institute in Colorado, or academically based in a very few cases. But ideology does seem to be a common thread among the writings and pronouncements of these libertarian critics. The views of these people give new meaning to Oscar Wilde's quip about cynics as those who know the price of everything, and the value of nothing.

## **Analytical Deficiencies in the Libertarian Critiques**

The following observations are drawn from several years of involvement in transportation planning and analysis in the Cincinnati region, and from reading a number of the criticisms of light rail transit offered by its opponents. The unwillingness of numerous critics to reveal their sources of funding for their anti-light rail transit tirades must raise questions about their economic interest in the issue, but that is not the focus here. Rather we make a few comments on the evident role of ideology in this debate and on appropriate analytical frameworks for drawing conclusions about the advisability of light rail transit investments.

Libertarians like markets and market outcomes. As a practicing economist who develops market based incentive mechanisms to solve environmental problems, so do I, and in fact I am

sincere in saying that I *love* markets, for the same reasons that libertarians do. Markets are very important mechanisms for preserving freedom of choice, the very heart of liberty. But I always add a proviso—"when they work well"—and I don't know of a single market, not one, left to its own devices that works well, and am still looking for an example to prove me wrong. We have ample evidence of the problems associated with insufficiently normed markets in various economic sectors in recent years to support such a statement: think Enron, WorldCom, Tyco, Microsoft, among many others, as the newspapers are regrettably full of reports of market excesses. Nonetheless, ideologues enamored of market outcomes tend to have a one size fits all approach to urban transportation (which is decidedly non-market), uncritically pointing to the current structure of demand for auto use as supporting their criticisms. That is, they seek to mislead by focusing on observed choices for private vehicle use (outcomes) rather than the determinants (the why) of the choices, and the benefits and costs of alternative choices. That is why "ideology" is an offensive word, as it is generally synonymous with a failure or inability to think problems through analytically.

It is difficult to think of an infrastructural system beyond transportation that has greater impact on our daily lives and on the economy—perhaps telecommunications is one. But it is clear that all markets depend critically on the transportation system, including labor, commercial, real estate, product markets. This is a trivial observation, but what is not at all trivial is exactly *how* they depend on the transportation system. Here we must delve into questions of causality, and anyone who has studied any market and economic behavior knows that understanding economic causality is not one bit trivial. I certainly get that appraisal from my students. Furthermore, understanding causality in transportation is the stuff of Nobel Prizes, as Daniel McFadden was awarded the Nobel in 2000 basically for methodologies that he developed in trying to understand and measure causal choices in transportation demand. Understanding transportation cause and effect, and benefits and costs, makes explicit theory and models *de rigueur* in this area, and anyone who pretends to draw valid conclusions about the appropriate structure of transportation systems for a region without reference to explicit theoretical and empirical models is a charlatan.

**Role of density.** What do we observe when we examine the writings of the libertarian and anti-light rail transit critics? Basically, there is a total absence of theory and models in these writings. Wendell Cox is perhaps the most salient of the anti-light rail transit critics and reflexive highway advocates. His typical approach is to proffer an endless list of data on light rail transit ridership, costs, population density, and so on, but never with an explicit analytical framework to organize the information. Undoubtedly, for him, his "facts" speak for themselves, but we all learned in school, or should have learned, the facts *never* speak for themselves. There must always be a theoretical framework within which to interpret observations on real world outcomes and people's choices, and to conduct hypothesis testing in order to distinguish good theories from bad. In fact, perhaps the best statement ever made about the role of theory in understanding reality is that of Kurt Lewin, the founder of modern social psychology, who noted that "there is nothing so practical as a good theory".

To illustrate, one dimension germane to the issue the critics like to cite is urban population density, which generally has been falling in most areas as people use rising incomes to purchase more mobility (more cars) and more land, available mostly and certainly less expensively at the suburban fringe, and as capacity continues to be added to urban freeway systems. In fact, some of these critics like to refer to light rail transit as a 19<sup>th</sup> century technology that is unsuited to the realities of the 21<sup>st</sup> century (they maintain that only cars are appropriate), and central to this argument is population

density.

On the surface, the population density argument is very plausible. Surely it is true that ridership on urban rail will be higher the higher the population density surrounding the stations. The argument they make is that the densities are too low, without ever specifying at what level of density a prospective light rail investment would change from a desirable to undesirable investment. And further, they studiously ignore, or deny, the dramatic long run effect light rail stations have on the surrounding land use—large changes in economic intensity and population densities, especially daytime densities.

Upon a little reflection, we can see that it is the density argument that is 19<sup>th</sup> century in nature and therefore antiquated. When most people in urban areas didn't own a horse and carriage and therefore walked to their destinations or to the street car stop, the density argument was valid and important. But in today's world, in the U. S. at least, most people own vehicles, so population density has lost its force. The rising interest in light rail today is caused by highway congestion, and since park and ride facilities are typically part of light rail transit investments, the *population* density argument is no longer important—what is important is *vehicle* density on the roadways, which is high and growing higher. This is another way of referring to congestion, and reduction in congestion is the major source of light rail transit benefits (more below).

Now, the benefits of virtually all investments in transportation capacity are driven overwhelmingly by savings in reduced time and money cost of transport, and this fact is built into virtually all transport demand models. This information is easily available to the anti-transit critics, but they choose to ignore it totally—surely it *is* “inconvenient” information.

In the absence of a clearly articulated and explicit model for predicting transportation choices, the critics can make cheap and superficial but plausible sounding arguments. But in fact, most of their writing reflects either an intellectual incapacity to formulate and reason from explicit analytical models, or in some cases where the training of the authors (some with Ph. D. s) ought to permit this, the writing borders on intellectual dishonesty. Tellingly, these critics don't publish in the peer reviewed literature, with a few exceptions, because most of what they write would be shredded by professional reviewers. Their writing certainly would be awarded a failing grade in virtually any economics class.

**What is the problem here?** What are we to make of these critics' proclivities to make the points with reams of information, and no explicit theoretical framework to make sense of the data? At least two explanations are possible. First, they may not have the training needed to understand the models and model results, and thus choose to ignore them. This circumstance does seem to fit some of the critics. I would conclude that such individuals are simply unqualified, and not competent to comment knowledgeably on transportation system outcomes, even though they may have served in local transportation agencies. Cox fits into this category.

Second, some of these critics do have some technical qualifications, but choose to ignore the conclusions that an honest application of disinterested analysis would generate. The most charitable of interpretations is that they must be ideologically motivated and therefore would find the exercise “inconvenient” as it would undermine their preconceived conclusions and the positions of their benefactors. Less charitably, perhaps their silence on the analytical issues should be taken as evidence of limited skills, and one of the more salient of the critics in fact did fail in his economic studies in graduate school, a fact he naturally prefers to hide. Or, perhaps this is a matter either of intellectual laziness, or more seriously, intellectual dishonesty. All of these factors can be observed among the

critics.

**What about costs?** It is true that light rail transit investments are very expensive, and so it is entirely appropriate to demand that they be carefully evaluated in order to avoid a large waste of public financial resources. What we need are criteria by which to evaluate the desirability of these investments. Interestingly enough, some of the better trained critics of light rail transit have been exposed to these criteria in their university education, but one looks in vain for any application of them in their writings. And the criteria are taught everywhere: in business, this is investment analysis. The more general analogue for public sector investment analysis goes by the name of project analysis, or more generally, benefit-cost analysis.

Now, competent benefit-cost analysis cannot be done without explicit modeling of both the demand (benefits) and supply (cost) sides of proposed transportation investments. None the less, the critics like to cite various cost arguments against light rail transit, employing disparate sets of data without explicit causal analysis, and using such deficient cost-effectiveness measures as cost per acquired rider, and so on. Such measures as guides to the desirability of transportation investments are deficient for two reasons: 1) they say nothing about the benefit side of the equation, and 2) they are unidimensional, as all cost-effectiveness measures are by construction. Net benefits analysis does not suffer from this deficiency, and is to be preferred for that reason.

### **Cincinnati's Experience**

Cincinnati has been contemplating a light rail transit system (a ballot issue for a sales tax increase to fund it in only one of seven counties in the metro region failed by a large margin in November of 2002). Nonetheless, Cincinnati's experience over the past several years in evaluating its desirability is instructive. There have been three components to this experience: a) a thorough analysis of a starter line, b) an analysis of a regional system, and most recently, c) an evaluation of several transport alternatives in an interstate corridor. Cincinnati's proposed starter line of 19 miles was given a thorough preliminary engineering analysis, but an early attempt to generate an economic valuation of the investment was inconclusive, mainly because no economic expertise was used in the evaluation. The findings were ambiguous, confusing, and therefore controversial.

Local officials decided that a genuine benefit-cost analysis of the proposed starter line should be undertaken (and the subsequent alternatives as well). A public solicitation was held, and a competent economic consultant was retained for the study. The purpose of the study was to apply investment criteria to estimates both of the benefits and the costs. The appropriate criterion for this type analysis is *net benefits*—the difference between benefits and costs. The study was very conservatively done in that some benefit categories were excluded, such as development benefits around stations, since with the funding available, it was not possible to determine how much development around stations would be new to the region, and how much would have been simply reallocated from some other part of the region. So benefits were underestimated. On the cost side, the most extreme cost conditions were included in order to ensure against the all too common bane of public investment projects, cost underestimation. An explicit uncertainty analysis was conducted (Monte Carlo) and the probabilities of the outcomes were generated with the aid of a regional panel of economists and corporate financial executives who oversaw the entire process.

Because the starter line proposed was to connect two states (Ohio and Kentucky), a river was to be crossed, and due to Cincinnati's particular topography, a tunnel was proposed. Although the costs of these two facilities would be shared over a complete regional system that is being proposed,

in this analysis all of these costs were allocated to just the starter system, which means that the average costs on a system wide basis were overestimated. Thus the mean total cost of the starter line was inordinately expensive, about \$750 million in that study (about \$130 million due to the river crossing and the tunnel), and this cost number has been the basis for much criticism of the proposal. The critics always focus *only* on the costs, and studiously ignore the benefits. This would be like ignoring sales revenue in a private market, focusing only on production costs.

On the benefit side, just three benefit categories were included: time savings from congestion reduction, environmental benefits and improved labor market mobility. The mean estimate for the total benefits of this starter segment was about \$1.5 billion, so the net benefits were about \$750 million. Direct comparison with a widening of the urban interstate in the study corridor showed light rail transit to have a higher return. Further, because only a starter line was analyzed, the network benefits of an interconnected light rail transit of course were not included, but we know from the analysis of other network systems (communications, highways) that the network benefits rise geometrically as the number of connections or nodes rise, while the costs rise essentially linearly. So benefits were underestimated on this account also. The largest benefit category of benefits was time savings in travel from reduced congestion on the highway, the main alternative to the rail line. It should be noted because of the equilibrium nature of modal splits (percentages of trips on roads, rail, bus), highways will always be congested even in the presence of light rail as long as we do not institute road pricing, but not as much as they would be without a light rail transit investment. Also for these kinds of studies the value of time saved is generally the source of most of the benefits.

Finally, it should be noted that this was an *economic* analysis, and not a *financial* analysis—no governmental subsidies were included in the analysis. The finding of net benefits of about \$750 million suggests that Cincinnatians could potentially fund the entire cost of the investment themselves with *no* state or federal assistance, and still be better off. It further means that since the proposed investment would generate about \$750 million of new value in excess of costs, an underestimate, it should be possible to identify a variety of fees and levies to capture enough of this increased value to pay for all of the costs of the line, and still come out ahead in the amount of at least \$750 million. A sequel to this study was a similar study for a proposed regional rail and bus system, employing the same methodologies, yielded a net benefit of \$4.6 billion.

We note that these results do take account of population and ridership density in the demand analysis. As Cincinnati is an old city, population density in the closer-in areas is still relatively high, and in the suburban areas, some argue that Cincinnati is one of the most sprawled regions in the country, so density is low. Nonetheless, the real driver of light rail benefits is congestion on the highway, and that depends on *vehicle* density, not *population* density. This fact suggests that one can make the interesting hypothesis that light rail transit benefits will be always be higher the *lower* the suburban population density, as that implies more sprawl, higher vehicle ownership and use and consequent higher road congestion.

The reason this benefit-cost analysis suggested such a huge return is not a mystery. Like many areas, Cincinnati has a very unbalanced transportation system—essentially all highway based. Given the growing evidence indicating that highway expansions generate induced demand for vehicle use, and the consequent realization that it is not possible to build one's way out of congestion, the incremental returns to complementary transportation investments can be expected to be relatively high—what economists call a high marginal product (increased mobility) for initial investments in a demand saturated (i.e. congested) environment. The same statement can be made for non-physical

alternatives, such as demand management through road pricing. With respect to road pricing, however, there is no reason to believe that *generalized* road pricing (not just a few toll roads) is either technically or politically feasible in the U.S. or most places. It is a reasonably safe prediction that similar benefit-cost analysis applied to most proposed light rail transit investments elsewhere would yield similar results.

In sum, the correct way to ascertain the desirability of proposal light rail investments is by comparing their benefits and costs. If benefits exceed costs, then the investment is “profitable”, using the language of business. One searches in vain in the writings of the libertarian critics for any understanding of this point. It is so elementary that one is left wondering how they can miss the point, but that of course takes us back to ideology and financial interest.

Tellingly, there has been no serious criticisms of the results of the benefit-cost analysis on this system. The libertarian critics have studiously and uncharacteristically ignored this study and its findings. Of course, most of them do not have the technical qualifications to criticize it, and the few that do have been silent.

## **Lessons**

While the libertarian critics of light rail like to dress up their arguments with the clothes of economic language, the truth seems to be that these clothes are quite transparent and therefore the arguments threadbare in the extreme, leaving all to see the lack of substance. Most of us would be acutely embarrassed to be so intellectually naked. But of course, we all understand that all ideologues are blind to reality and to the vacuousness of their arguments. There may be a lesson in our experience, and that lesson is simple: *good information from a carefully conceived and executed study removes the information poor environment that the libertarian critics require for their superficial, poorly thought out and misleading arguments.* I would like to think that these critics have nothing to say to a community that has done its homework. But it appears that the kind of benefit-cost analysis we did here is not very often performed, and until real economists became involved, the information produced by the usual consulting process was confusing and woefully inadequate. It definitely muddled the debate here.

The reasons are basically two: the regional transportation planning agencies are typically the metropolitan planning organizations (MPO), and they seem rarely to have the required in-house expertise to ask for and oversee such benefit-cost work. Usually they are staffed with planners and engineers, who typically have a very limited exposure to economics in their training, and certainly not benefit-cost analysis. The MPOs typically rely on engineering consulting firms who typically also do not have the requisite expertise. My long experience working in an engineering organization has been that engineers too frequently suffer from the hubris that they can do the economic analysis, since many if most have had a course in engineering economics. An examination of a few contemporary engineering economics books reveals that there is precious little economics in these books, as they are mostly books on business finance for construction projects and at most have just one chapter devoted to public projects.

So one piece of advice is that if a community wants to avoid the misguided criticism of proposed light rail investments by the uninformed libertarian critics, they need to do their homework first. And that starts with having the required skills in-house at the MPO, and an insistence that hired consultants assign appropriately trained personnel to the work. This may not be easy to achieve, for in response to our solicitation, one very well known and established consulting firm bid on the

benefit-cost work, and sent two non-economists to make the presentation of their proposed work. They clearly had no compunctions whatsoever in asserting that they could do the work, even though they themselves did not have the appropriate training and did not propose to assign even one economist to the project. In our case, having a local panel of economic and financial experts to aid in the selection of the consultant and to guide the study clearly was a plus in establishing the credibility of the analytical effort. This panel publicly endorsed the process which generated the findings. The process definitely seemed to work for us.

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