

John Forester, M.S., P.E.
Cycling Transportation Engineer
Consulting Engineer, Expert Witness, and Educator in
Effective Cycling, Bicycles, Highways and Bikeways, Traffic Laws
7585 Church St., Lemon Grove, CA 91945-2306
619-644-5481 forester@johnforester.com

Saturday, November 1, 2008

Review of:
Active Transportation for America:
Published by Bikes Belong and Rails-to-Trails; 2008
By Thomas Gotschi, Ph.D. and Kevin Mills, J.D.

1 Introduction

Active Transportation for America advocates switching motor trips to walking, bicycling, and public transport, and through greater densification, by calculating the benefits to be produced by these changes. As is usual for all such advocacy documents, ATfA provides calculations for many benefits to be achieved by the amounts of motor-ing so transferred. The report's authors postulate two levels of transfer which they call Modest and Substantial.

I see three objections to the conclusions of this paper.

- 1: The first is that there is no recognition of the benefits lost by forgoing motoring. People motor because it provides them benefits relative to the other choices; replacing a motor trip with a walking, cycling, bus or rail trip removes the benefits provided by motoring. The benefits lost are ignored in this document.
- 2: The authors almost assume that transferring motor trips to public transportation is without cost. I say almost because of the admission "the benefits of public transportation related to reducing congestion, fuel consumption, and highway infrastructure costs diminish when occupancy rates of trains and buses are low. Increasing total ridership and occupancy rates must therefore be a top priority to maximize return on existing and future infrastructure investments." By and large, urban public transportation is inefficient and costly to the public and inefficient to the user. Where it is most efficient for the user, high-speed rail to a

very dense urban center, it is the most expensive to the public.

- 3: There is no evidence of the effectiveness of processes by which either the Modest or the Substantial transfers from motoring can be achieved. There are examples, but examples become evidence only by close investigation of the causes and results, which are not provided.

I have other objections also. One is that walking and bicycling are not separated; one cannot tell how much of what is produced by each mode. And the publication values are crummy. Sure, it will look good when done by a commercial printing operation for distributing to politicians, but when downloaded and printed out much of it is very difficult to read.

2 Authors

Two authors are listed.

Thomas Gotschi, Ph.D., has had several papers published on the relationship between air pollution, say NOx, and highways. His current employment is as Research Director of Rails to Trails.

Kevin Mills, J.D., has been active with Environmental Defense Fund's pollution activities in the Great Lakes, and with EDF's clean car project.

Neither of these authors has any professional qualifications in the fields of either urban transportation or bicycle transportation.

3 Actions to be Achieved

The paper contains several tables on different pages, under the general title of “Do the Math, N/4”. Most of these are calculations of the benefits from assumed amounts of motoring avoided. Very few items in these tables concern the amount of motoring that might be transferred to walking, bicycling, and public transit, and how this transfer is to be produced. I list the entries relevant to these assumptions, with the three values given for Current, Modest, & Substantial programs.

Only the following items were considered:

Items included for transfer to W & B: Trips of 3 miles or less.

Items included for transfer to PT: Trips of 1 to 15 mile length.

Reduced trip distances from densification: Trips 1 to 15 mile length.

The following mode shares are assumed for the Current, Modest, and Substantial programs.

Trips < 1 mile: 31%, 40%, 70%

Trips 1-3 mile: 4%, 10%, 25%

Public Transit trips 1-15 mile: 2%, 5% 15%.

Trip length reduction by densification: 0%, 1%, 3%.

The authors state: “Based on these assumptions, the synergy between bicycling and walking and public transportation results in “ reduction in motoring miles.

No evidence is presented as to how these assumed transfers from motoring are to be achieved.

4 Authors’ Assumptions Underlying Authors’ Assumptions

The assumed transfers from motoring to walking, bicycling, and public transit are supported, if that can be the word, by other assumptions that reflect the authors’ beliefs. I quote several of these.

4.1 Motoring Monopoly

“For most Americans, the predominance of the car and the lack of adequate infrastructure for bicycling and walking have basically eliminated all transportation options except for one -- driving.”

“Most Americans”? This paper addresses issues relevant to only urban Americans. Most urban Americans cannot walk outside their front

yard or front door? Most urban Americans cannot cycle from their front door? Three out of the four houses that I have owned are on streets without sidewalks, yet children walked to school and do so in front of my house today. And there has been cycling, also.

4.2 Motoring is Inefficient

“Over-Reliance on Driving is Inefficient ... As with any monopolized market sector, our transportation system now offers a single brand of mobility developed without incentives to provide the best possible product, and without competition that would assure the best price. ... The inefficiencies of this car-centered monopoly become apparent every day: congested roads that cost us precious time, gasoline prices that shrink our disposable income, road infrastructure projects that place massive burdens on state and federal budgets, ...

The claim that private motoring is a monopoly system is absurd. Competing with motoring are walking, bicycling, public transit, and living in high-density homes. Motoring has attained his dominant market share simply because it suits the travelers better than do the other options. The only monopoly power that the authors name is that for oil, which, unfortunately for the authors’ argument, hinders motoring rather than encouraging it. The other claimed inefficiencies are equally false. Certainly we have road congestion that costs us precious time, but the authors fail to mention that walking, bicycling, and public transit are all more time-consuming than motoring. Certainly many road projects are expensive, but they are largely paid for by the users, while public transit is a massive consumer of public moneys, including funds stolen from the motoring public.

4.3 Universal Mobility

“Universal Access to Mobility ... Access to mobility is crucial to thrive economically, socially and physically. ... Transportation in America must be accessible for all Americans. Bicycling and walking are crucial in providing universal mobility.”

If people without access to an automobile, but who can walk or cycle, stay shut up in their houses, that’s their choice, not something forced on them by the system. Such people may find that public transit does not meet their needs. There is a good case that the public-transit subsidy funds should be directed toward meeting the transportation needs of those without access to private motoring. Unfortunately, much of that money is

directed to less socially desirable projects. If this person without access to private motor transportation lives in the rural areas, then none of the proposed solutions will work well for him. He most probably has depended on motoring assistance from family or neighbors, or he is living a very meagre existence.

4.4 Public Transportation and Congestion

“Public transportation plays an important role in mitigating congestion because of its capacity to move large numbers of people over expansive distances, without requiring much land.”

The authors fail to mention that such transportation requires large numbers of people at each end, or all along the route. BART serves the San Francisco high-density financial district, and collects from a large suburban area. The New York subways serve an extremely high-density area. Most people don't want to live in such areas, or can't afford to do so. They are concentrated areas of high-value employment. The issue concerns the extent to which large quantities of public funds should be devoted to subsidizing these areas.

4.5 Bicycling as a Substitute for Freeway Motoring

“A single mile of a four-lane urban highway costs at least \$20 to \$80 million, but alleviating congestion in the worst bottlenecks of urban freeway systems often costs several times as much. Bicycle and pedestrian infrastructure costs much less on a per traveler basis.”

I think that very few of those motorists who choose to drive through the congested centers at rush hours will find that their transportation needs would be met by walking, or even by cycling. Those motorists travel distances too great for either mode.

4.6 Business Ignorance

“In such communities, a bicyclist has the choice of riding two miles to a local merchant instead of being required to drive to a mall several miles away to make the same purchases.”

The whole business world recognizes that people take the trouble to drive to malls because their goods are either better or cheaper than is available at local merchants.

4.7 Self-Contradictory Choice Argument

“It is time to give Americans back control over their mobility. If given choice, Americans know which transportation mode is best suited for each trip they want to take.”

The trouble with this argument is that Americans choose to use motoring for most trips, the mode that the authors are arguing against. To escape this paradox, the authors argue that Americans are forced into motoring because motoring is the only safe mode available: “Millions will choose to walk or ride a bicycle if safe and convenient infrastructure is made available.”

So sidewalks make walking much safer? I rather doubt that much urban transportation is hindered by the lack of sidewalks. In urban areas, roads without sidewalks are those with little traffic; where there is much traffic, there are sidewalks. But, I have not more than my observations in this respect; if there is any study demonstrating that installing new sidewalks, where there had been none, in old urban areas, produces a transportationally significant increase in urban walking, I haven't seen it and the authors do not reference such.

And bikeways are assumed to make cycling much safer? The authors are ignorant of the two debates on this point. The claimed effect that bikeways make bicycle transportation much safer has never been demonstrated and is contrary to traffic-engineering knowledge. The claimed effect that this supposed increase in safety through bikeways produces transportationally significant increases in the modal share of bicycling has also never been demonstrated. It is obvious that Americans base their reluctance to use bicycle transportation on many other factors than the absence of bikeways.

4.8 Conclusions Regarding Authors' Assumptions

The assumptions on which the authors apparently, in the absence of facts, base their argument, are so patently false that no reliance can be placed on their conclusions.

5 The Authors' Ignorance

This advocacy document argues that if a significant transfer from motoring to walking and bicycling, and public transit occurs, then some set of benefits will be produced. Up to this point, I

have argued that the assumptions on which the benefits are calculated is based on false assumptions. Now I discuss the probability of making this transfer from motoring to walking, bicycling, and public transit.

The authors state: "This report is a call to action. The choice is clear. The time has come for a truly multi-modal transportation policy; a policy that recognizes that driving is not always the quickest, cheapest, cleanest, healthiest -- or only - way to go from Point A to Point B."

The authors have provided no evidence as to how to produce this transfer (other than the argument of spending money on it, which has not been demonstrated to be efficacious). The analysis required is that of the comparative value to the traveler of the various modes available. Value to a traveler has several components: cost, travel time, waiting time, comfort, safety, benefits of the two places, benefits of the travel, reliability, social status, and superstition, when all phases of the trip are combined. This is not an easy analysis.

The authors show no knowledge of this analytical method, and, equally, no knowledge of any of its parts. All that the authors have considered is trip distance.

There is a 74 item bibliography (needs a magnifying glass to read it), but it contains no reference to the actions of motoring, walking or cycling. If you don't know how each of these is done and why it is done, you cannot produce realistic recommendations for how to persuade a traveler to change his current choice.

It is obvious that this paper presents nothing of value, except to the bicycle advocates who paid for it and who commonly accept and advance other worthless advocacy arguments.