Traffic Engineering and Mass Transportation

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In addressing this group, I am aware of the fact that nearly all traffic engineers are employed by official agencies—either state or municipal. Pretty generally, your position is that of a staff officer advising some other department or branch of your governmental unit. Often your advice is not taken or is only partly taken by the branch that actually does the work. In far too many cases, solutions to traffic problems are subject to political and commercial pressures beyond your ability to control. Often they are approached by others on a basis of prejudice and opinion rather than one of fact. Prejudice often injects itself into the ultimate decision to the extent that your original recommendation is rendered almost unrecognizable.

The evil effects of traffic regulation and control by opinion and selfish interest are well known to all of you and need not be restated here. The fact remains, however, that with all the outside pressures arrayed against your factual analysis, you must be exceedingly careful to guard against injecting opinions in the place of facts in your own conclusions and recommendations. No one knows better than I the tremendous forces that can be aroused against an unpopular recommendation of yours, however sound it may be. I have been on the receiving end of many such demonstrations. You will be faced many times with the making of a decision as to whether it is better to stand firm and perhaps lose your job, or to compromise a little and thereby live to fight another day. These are hard decisions to make, but I would suggest to you that there is no such thing as a little compromise on fundamentals.

My subject today confines me to traffic engineering and its relationship to mass transportation. In dealing with it, I approach you as a representative of one of the largest single factors in your problem and one of your best tools for solving your problem. I hope to present some angles that you may not have considered or at least develop a different viewpoint on some of them. In dealing with these problems, I am considering you as staff advisers to other units which you will have to edu-
cate to your way of thinking. Many of the things which you know to be facts have never been presented to and considered and accepted by responsible officials in other city and state departments. A large part of any traffic engineer's duties consists of carrying on a continuing educational campaign to prepare the way for acceptance of his recommendations. In the course of this action, care must be taken that you do not pick up and accept any of the many popular fallacies of those less informed.

SOME POPULAR FALLACIES

May I submit a list of ten of these popular fallacies, pertinent to our subject, which you have, or will, run up against:

1. *That transit companies reap huge profits.*

   This, of course, is not true, as may be ascertained by a quick look at the selling price of their stocks. This may be further confirmed by the number that are now subsidized by direct taxes and the number that go into receivership. They are, however, organized for profit, as is practically every other business enterprise. This country has attained its great growth and prosperity under the profit system, and it is not considered disgraceful in most cases in this country to make a profit. Some people have been led to believe that utilities should make no profits. This however, should not be a matter of concern to traffic engineers.

2. *That these companies reap these huge profits from free use of the streets.*

   This is not true, but very few persons realize to what extent a transit company contributes to the maintenance and repair of streets. Last year our company paid for such purposes the following sums:

   Registration fees, fuel taxes, street assessments, oil taxes, tire taxes, etc., directly applicable ................................................................. $141,238
   Real estate and property taxes ......................................................... 262,607
   Snow and ice control ................................................................. $10,000
   Painting and marking loading zones ........................................... 30,000

   Totals ................................................................................ $40,000 $403,845

   It may be argued that this money does not go for such purposes, but if that is true, the defect is in the allocation, rather than the collection.
3. The third fallacy, based on the first two, is: That governmental officials should not in any way assist a transit company because it is making a big profit from free use of streets.

In addition to being based on two erroneous conceptions, this further ignores the undoubted benefits to the city of a transit system with a sound profit structure.

4. That movement of vehicles is the traffic engineer's job.

Your job is concerned with the safe, convenient, and expeditious movement of persons and goods. The use of vehicles is only a means to that end. Many instances can be cited where such movement of persons is accomplished without vehicles in limited areas. Even if we were to grant that moving vehicles is part of your job, it is only part of it. Terminal facilities and safety are equally important parts.

5. That private motor vehicles carry most of the movement of persons in downtown areas.

This fallacy is promoted very effectually by casual observation of the downtown streets crowded with vehicles, jammed up at intersections, and by the din of their horns as they try to blast a passage through. Actually the number of persons entering the downtown area in any large city is greatest by mass transit. The proportion varies with the size of the city. In Indianapolis about 60 percent of all persons entering the downtown area each day do so by use of transit vehicles.

6. That provision of arteries for carrying more vehicles into the downtown area is the most desirable end.

This totally ignores the fact that even now we can't park the ones that we can get into the area and also that the cost of providing these arteries is, in most cases, out of all proportion to the benefits to be expected.

7. That there is a conflict of interest between traffic engineers and transit companies.

8. That you have no interest in transit service.

9. That transit companies do not want your help.

10. That when new street facilities are designed and constructed, the expenditure of public money for provision for transit movement is a misuse of funds.

These last four will be handled further on in this paper.
This is quite an imposing list of popular fallacies and is by no means a complete one. You may or may not entertain all or part of them yourself, but you won’t need any bloodhounds to help you find persons in your governmental unit who do hold these views.

You do have a community of interest with transit companies. We are a part of your problem. You always find transit where there is a mass movement of people. That is also where you find most of the traffic engineers. This may prove that both are there by popular demand and that both have a part to play in the solution of the problem. Both are interested in the movement of persons—you, because that is what you are paid for, and transit because that is the way it derives its revenue. The freer the movement, the better we both succeed.

TOOLS AVAILABLE FOR TRAFFIC ENGINEERS

As a traffic engineer, you have certain tools available. Very roughly stated, these are: the public ways, vehicles, traffic-control devices, and regulatory measures. Your city street system has pretty definite limitations as to size and general geometric design. It cannot be transformed entirely in many lifetimes and cannot be transformed on even a limited mileage except by the expenditure of huge sums of money which you do not have and which are not likely to be available in the foreseeable future.

It is pretty generally conceded, too, that the public does not respond favorably to too much regulation and that the optimum of public acceptance goes hand in hand with a minimum of regulation. This, then, leaves you a comparatively free hand on simple geometric changes involving curb cuts, turning radii, islands and dividers, use of traffic-control devices, and use of vehicles.

Obviously, you cannot choose the vehicles that will use the streets, but you can encourage the use of the type of vehicle that makes the most efficient use of the streets you have available. Whether you realize it or not, transit vehicles are daily carrying a large part of your problem. As persons leave transit to use their own or other vehicles, your problem is enlarged—not only the movement problem, but problems of parking and traffic safety as well. Conversely, as more persons are attracted to transit riding, your problem becomes lighter. Doesn’t that prove a community of interest?

This does not mean that you should stand on the street corner and advise people to ride transit vehicles. That would only make you appear ridiculous, and you would be like the old woman who tried to sweep back the ocean with a broom.
The transit industry has a very perishable product for sale—one that can't be stored up. It is one of the few industries that must market its product the moment it is produced, or it is lost forever. It is a highly competitive business, and it is the only one I know whose customers make daily decisions between it and its competitors. Every morning, transit customers make a decision whether to ride a transit vehicle, drive their own car, ride with someone else, or walk. On these daily decisions rests the fate of the transit company and on them depends whether there are traffic jams or free movement at your downtown intersections. Some Briton once said that England’s battles were won on the playing fields of Eton. Yours and ours are won or lost at the breakfast tables of our people.

Here’s where I should like to explode another popular fallacy. Contrary to what you may think and what many do think, these decisions are not made on a basis of cost. If cost was the only factor to be considered, the decisions would always be in favor of transit. But these decisions are made in the light of past experience—what happened yesterday and the day before and last week. Here are some of the questions asked:

Will I get to work on time?  
How long will it take?  
Is it safe?  
Will the children be safe riding alone?  
Is it comfortable?  
Is the operator courteous?  
Will I have to walk a long distance?  
Will I have to wait a long time?  
Will I be delayed by an accident or for some other reason?  
Will I get a seat?

These are the things that determine the answer to your problem and ours. It is to your interest as well as ours that we win these decisions. If, this morning, in Indianapolis, one percent of these decisions had been lost, it would have required both sides of the street for 30 blocks to have parked the additional vehicles brought into the downtown area. Where can you find such parking space in your city? Conversely, you can see what the effect would be on your parking and movement problem if one percent more could be induced to ride transit vehicles.

It seems evident that we can work together to our mutual advantage. How? The answer is probably too simple to be of much interest to you. I can offer to you no breathtaking schemes to captivate your interest or stir your imagination. I can only recommend the toil, sweat, and tears
of everyday traffic drudgery. Fortunately, we are interested in movement. Anything that will speed up our operation will permit us to serve more people better with the same amount of equipment and much the same operating costs. Here are a few common everyday things you can do to help us.

1. See that traffic signals are timed so as to cause a minimum of interference. If there are many signals on a route, they can easily add a few minutes to the round-trip time.

2. Provide, for all rubber-tired equipment, curb loading zones of adequate length to permit us to load and unload at the curb, and keep parked or stopped vehicles out of these zones so that they are available when needed. A curb loading zone is a very great temptation to a passing motorist to stop for a few minutes to run into a store. These few minutes may block out two or three passing buses. A different-colored marking for bus zones and a higher penalty for parking there may be the answer.

3. Channelize irregular intersections to provide freer movement.

4. Regulate and control downtown pedestrian movements.

5. Control parades so that transit movement is not stopped or rerouted, especially during rush hours.

6. Control railroad switching movements so as to minimize delays at railroad crossings.

7. On narrow streets carrying transit routes, restrict parking to one side and see that it is enforced.

8. Stop double-parking and the equally delaying double-stopping.

9. Put an end to the practice of trucks backing in perpendicular to the curb to load and unload.

10. Closely regulate the barricading of parts of the traveled way by construction companies when constructing or remodeling buildings. A little observation will show that most of the street surface thus taken is used for free parking of the construction companies' vehicles at the expense of the public at large.

11. See that transit routes are kept in repair.

12. Provide prompt and effective snow and ice control on transit routes.

13. Wherever possible, make transit routes preferential streets.

14. Travel your transit routes frequently to see what the problems are.
15. Remove and keep removed all sidewalk obstructions at bus stops. These obstructions such as waste paper containers, garbage cans, posts, etc., offer a serious hazard to passengers boarding and alighting and slow down the operation.

16. Provide turning radii of proper size.

17. Explain to the police the necessity for getting traffic moving as quickly as possible after an accident. In cases where transit vehicles are involved, any unnecessary delay in clearing the vehicle may cause 50 or 60 people to be late for work.

18. Cooperate closely with the fire department to the end that they will not permit their apparatus to block transit routes a minute longer than is necessary to control the fire.

19. Use far-side and mid-block stops where needed.

20. Make use of one-way streets where practical.

21. Help promote in your city a staggered-hours program.

22. Establish and maintain liaison with your transit company, consult them freely on route changes, and get their reaction on other proposed changes before they are announced or put into effect.

We have many problems that are not common to other vehicles. We carry a live load, often a standing load. Often our operators have to make a split second decision whether to hit a car that has suddenly pulled in front of them, or throw their passengers in the aisles in avoiding it. Occasionally they make a wrong decision; but by and large, day in and day out, they do a much better job under the most trying conditions than the average motorist on the street. They do it because they are trained to do it and because they are never permitted to forget that safety is their primary consideration.

Another thing that would help speed up our service would be to have all passengers alight at the center doors. One of the reasons they don’t do this is that outside the downtown area if they get off at the center door they have to alight in mud or water. The provision of paved areas between curb and sidewalk for center-door unloading would help very much. Buses, you know, have only one door in front; therefore, all loading must wait until passengers have alighted. Any means for inducing center-door alighting would speed up operation.

Proper application of the remedies suggested could easily result in cutting five minutes running time on most of our lines and provide a smoother, safer ride. In this way you can help us help you.
You will note that nothing has been suggested here that is spectacular or new—and nothing that you as a traffic engineer cannot fully support as being in the interest of all traffic movement. Give us freedom of movement, freedom from interference, and consideration and forewarning before changes are made, and we can do the rest.

The transit system in your city is the best, the cheapest, and the most readily-available traffic-engineering tool you have. Its needs seem trivial when compared to some gigantic construction project, but don’t put them aside because they seem small. I have a feeling that part of our traffic trouble today is that too many persons want to put over a big project that will capture public fancy and far too few want to undertake the daily drudgery that is necessary to keep things moving.

Remember:

The task close at hand is a big one,
Though it seem to be humble and small,
If you think that it’s not worth your effort,
You wouldn’t do great ones at all.