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## Urban Transportation Policy: Time for Reorientation

### Abstract

Written testimony from Vukan Vuchic to the Transportation Committee of the National Conference of Democratic Mayors in New Orleans on March 22, 1975.

### Disciplines

Engineering | Transportation Engineering

URBAN TRANSPORTATION POLICY:  
TIME FOR REORIENTATION . . .

A Statement Presented to the  
National Conference of Democratic Mayors

22 March 1975  
New Orleans, Louisiana

By:  
Yukan R. Vuchic, Ph.D.  
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and Urban Engineering-Transportatic  
University of Pennsylvania

Gentlemen:

I appreciate very much your invitation for me to present my views on the crucial issue in urban transportation: formulation of a rational, forward-looking policy. Such a policy, which is in many cases even more important than obtaining funds, is presently rather confused and in many respects, non-existent.

Urban crisis in a country in which 70 per cent of population live in urbanized areas represents a national crisis. As the ABC commentator Howard K. Smith recently said in one of his excellent editorials on urban problems, the burden of absorbing the most massive population migration in our history, from rural to urban areas, has been left to our cities to bear alone while many industries and businesses managed to avoid their share of the burden by abandoning central cities and protecting themselves in the surrounding areas by county or township boundaries. These boundaries are now historic remnants and have lost any functional basis in our expanding metropolitan areas. It is the time that our nation recognizes that without creating healthy cities the nation cannot progress.

#### Urban Transportation: Reasons for Confusion

Transportation represents one of the major contributing factors to the urban crisis. One analyst of urban transportation recently observed:

"... The results (of increase of automobile ownership) have raised the question whether it is possible to be urbanized and motorized and at the same time civilized".<sup>1</sup>

This pessimistic view is not alone. Similar views are often expressed in discussions about urban transportation by different groups of people and with different purposes. Some would like to have improved urban transportation and environment, but have become pessimistic after many years of their deterioration; others, not having seen or lived in a healthy, modern urban environment, are not aware that it can exist.

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<sup>1</sup> W. Owen: The Metropolitan Transportation Problem ( p.ix); Doubleday, New York, 1965.

Finally, there are some who intentionally want to prevent progress in urban transportation and the urban environment and who work hard to create pessimism and confusion.

A recent publication released by the Congress<sup>2</sup> is an excellent illustration of the existing confusion in urban transportation. Relying heavily on statements made by special interest groups and extreme proponents of a single mode of transportation (the private automobile), the report uses numerous incorrect analyses to prove its points. For example, attempting to discredit rail systems, the cost of rail vehicles is compared with the cost of buses, not taking into account the fact that rail vehicles have 2-3 times longer life, about twice higher capacity and run at higher speeds. The report makes no mention of extremely successful solutions to urban transportation achieved in several West European countries, but concludes with statements that the basic goals of our cities are unknown. The fact that a report at such a high level leaves the reader more confused than informed and directed toward solutions clearly shows the serious lag in our knowledge and understanding of issues in urban transportation.

Is the pessimism justified? Is it true that motorization and urbanization will destroy civilization? Is modern urban transportation really incompatible with healthy urban society and environment?

The answer to these questions is a categorical "No". Modern urban transportation systems, when properly designed, are not only compatible with, but are a basic prerequisite for healthy cities. However, "modern transportation systems" are not those which rely virtually exclusively on the private automobile, or any other single mode. The diversified requirements for travel in cities can be satisfied only by a rational use of several modes mutually coordinated into a system. And if we improve understanding of the issues involved in creating such multimodal systems, the solutions become much more clear. It also becomes obvious that many of them are realistically achievable.

To get a better understanding of reasons for our urban transportation problems, it is useful to take a look from a broader perspective.

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<sup>2</sup> "Urban Transportation (Dilemmas at a Time of Decision)"; Staff report, Subcommittee on Investigations and Review, to the Committee on Public Works, House of Representatives; April 1973.

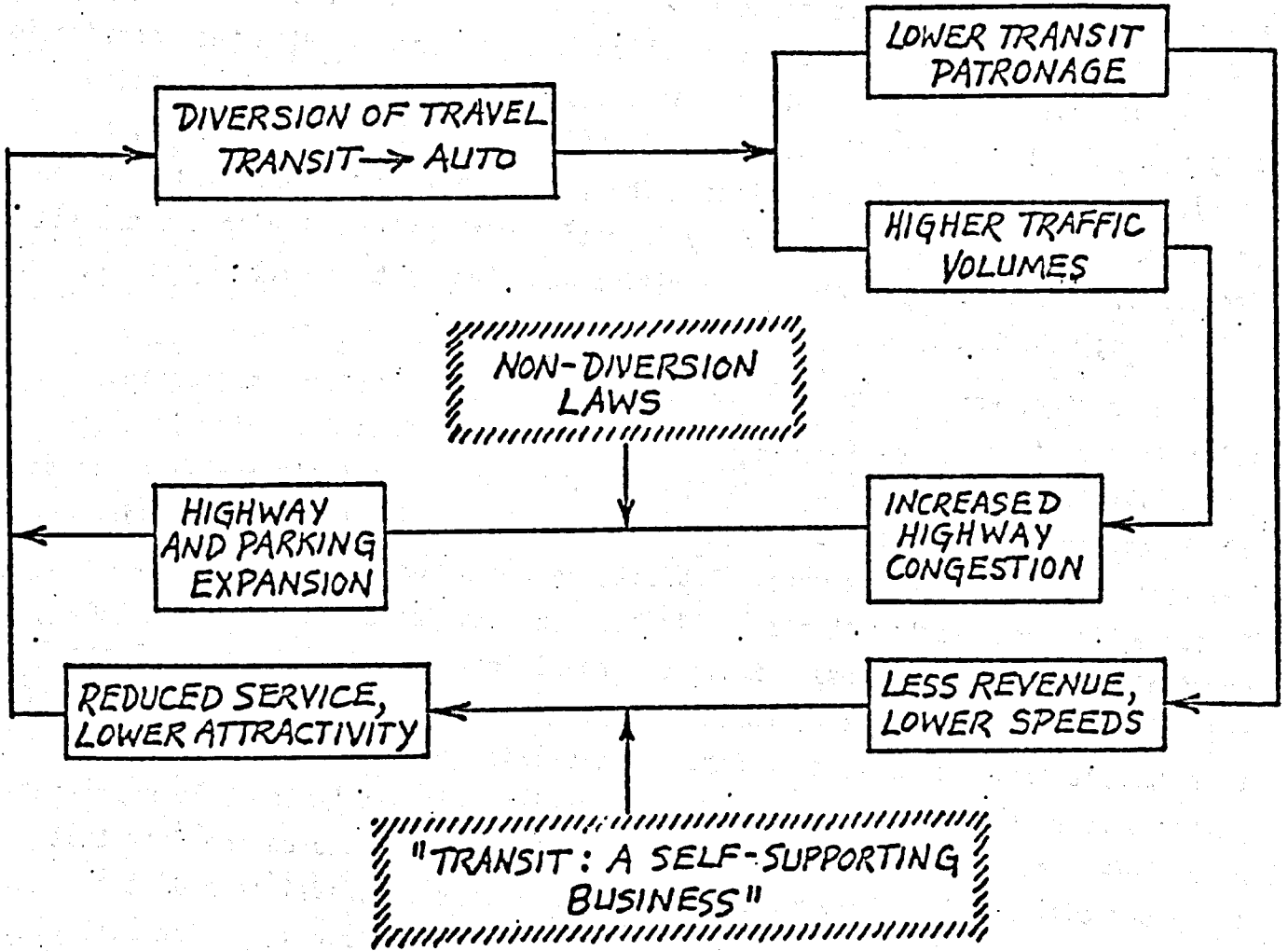
## Urban Transportation in Perspective

One of the basic reasons for the creation and existence of cities is that human interactions and economic opportunities in them are increased. Mobility within cities due to their compactness and frequent public transportation service used to be greatly superior to mobility in rural areas. With the introduction of the automobile and subsequent decline in quality of transit, this relationship changed. The automobile is extremely efficient in low density areas, but poorly suited to travel within cities. Thus, the mobility in rural and suburban areas improved greatly, while mobility in cities with badly deteriorated transit decreased. The mobility advantage of cities was thus lost to outlying areas, stimulating suburban sprawl.

The critical error in these developments was in the policies concerning urban transportation. As the diagram below shows, the "non-diversion laws" for automobile taxes locked the highway systems into an automatically self-accelerating circle of construction of more highways and parking facilities, stimulating and forcing people to drive more. Transit, on the other hand, treated as a "private business" rather than a public service, was pushed into a fight for survival rather than progress. Shift of travel from transit to auto, a logical and foreseeable consequence of these national policies, was then used as a proof that "people prefer auto to transit". Quasi-patriotic slogans that such travel patterns represent a "free choice of individuals" and that "Automobile represents American way of life" confused the issues further. They ignored the fact that today our city dwellers have much less choice of type of travel than do the citizens of Munich, Paris, Rotterdam or other cities with excellent transit. It is also overlooked that creating prosperous cities should be a more important goal; as "American way of life" than inducing people to drive automobiles through deteriorating cities.

As a result of these policies -- which have been so far only slightly corrected -- we have today urban transportation systems consisting of largely obsolete, poorly financed transit competing with equal rights for space with many times less efficient automobiles.

On the other hand, very little has been done to adjust the automobile to urban use. Vehicles designed for cross-country travel are used on highway systems better suited to rural and suburban than to central urban area. Classical errors have been construction of tight freeway rings around central business districts, while neglecting modernization of streets, signals, etc. This has



The Vicious Circle in Urban Transportation.

 POLICIES

resulted in excessive amounts of land devoted to parking and damage to the urban environment. At the same time the pedestrian, the basic element of urban life, is forgotten and practically purged. Thus, potential capabilities of all modes of travel in cities are poorly utilized to the detriment of overall mobility and quality of urban environment.

A major obstacle to improvement of urban transportation is that many cities still have separate and inadequately coordinated departments dealing with streets, highways, parking, and public transportation ( and often, nobody in charge of pedestrian traffic). Lack of clearly defined transportation policy leads to frequent mutually conflicting actions by these departments.

### Current Trends

Sharpening of environmental problems and the energy crisis have focused attention of the country on the inefficiencies of our urban transportation. The public opinion is now stronger for improvements in urban environment, and particularly public transportation, than ever before. Yet, the progress is extremely slow, clear directions for improvement are lacking.

If we analyze the malls being built in the most modern suburban shopping centers, we can see that they actually try to imitate downtown streets with shops, places to meet, etc. But they do not imitate traffic congestion which is so damaging to our busy downtown streets; rather, they resemble those streets as they were prior to the appearance of the automobile. Why can we not create the same thing in city centers, in a much more attractive way and at a larger scale?

This is actually what European cities have been doing in recent years. Virtually every month a new pedestrian mall is opened in a European city, and their results are remarkably beneficial for all cities. We in the United States are far behind because of lack of coordinated transportation policies and lack of concentrated efforts which would convince the sceptical businessmen that such a change would help rather than hurt their businesses when properly planned and implemented.

Another major action which several European countries have pursued with excellent results is separation of transit from other traffic through construction of rapid transit and light rail systems as well as introduction of transit lanes for streetcars, buses, and trolleybuses on urban streets. Separation of transit is the most significant single step in upgrading transit service to a level



competitive with the automobile.

Parking policies in Europe have also been used as a very efficient means of influencing choice of modes and policies toward different types of travel by auto.

We lag behind Europe in these developments not only because of lack of financing, but also because of considerable confusion created by many strong highway proponents on one side, and on the other side by the vociferous group of proponents of "new systems", most of which are greatly inferior to the existing modes. Both of these groups have focused their attacks particularly on rail transit which in many cities could attract the greatest patronage and would represent the most economical solution.

Thus, clearly, the current situation calls for a major critical evaluation of present trends and formulation of a well-defined urban transportation policy.

#### Suggested Policy Elements

Urban transportation policy should be based on an approach to transportation as a functional system in which each mode is treated according to its efficiency. The basic units of performance and efficiency are passengers carried, passenger-miles, or passenger-miles per hour. Consequently, a bus carrying 25 passengers should be given the same importance as 20 cars carrying an average of 1.25 persons. A light rail line carrying 1000 persons per hour should be given a separate right-of-way to avoid disturbance from lanes which carry 800 persons in 600 automobiles. The absurdity of using vehicles as units of efficiency, which is clearly counter-productive, should be eliminated.

By the same token, various policies (lower registration fees, parking rates) should favor small over large automobiles. Higher gasoline consumption vehicles should be taxed higher than more economical ones because of their greater pollutant production and energy consumption.

The employers and businesses who contribute to transportation of their employees/customers should make an equal contribution to all modes of travel, or, preferably, favor walking and public transportation. The current practice of supplying free parking leads to the illogical consequence that, for example, a person coming by bus or walking into a supermarket actually subsidizes travel of shoppers who drive to it! Consequently, equity and social interest dictate that if a business provides free or subsidized parking, it also should pay a tax to be used for transit, walkways or, in some cases, bikeways.

A method and formula for regular transit financing without the increasing fares spiral should be devised to remove the transit industry from its constant fight for survival and allow it progressive planning and modernization. Financial assistance for operations should again be based on productivity of modes and social equity. Contributing 20¢ per transit ride for city dwellers while assisting suburban users of dial-a-bus at \$1.20 per ride is neither logical nor desirable.

Environmental statements for highways should insure adequate treatment of all modes. The present requirement that highway designers must check with numerous agencies including fish and game commissions, historic preservation societies, etc., should be supplemented by the requirement that transit needs should be considered and pedestrian safety provided for.

Efficiency of transportation should be greatly increased by specialization of different types of streets and arterials. Thus some arterials should be designed primarily for automobiles while "transit streets" and pedestrian malls should exclude them.

Traffic restraint in city centers, which is necessary because of environmental and energy conservation reasons, must be accompanied by corresponding improvements in transit service to avoid a decrease in mobility which would be damaging to cities.

The role of transit which varies with city size and other characteristics, should be specifically defined and used in developing specific goals in each city. In medium and large cities transit must provide service of a certain quality acceptable to passengers, which covers the whole city and operates at all times of the day. This service quality can be achieved only by extensive use of separate rights-of-way for transit.

#### A Brief Review of Modes

Pedestrian travel should be greatly improved and encouraged for all local travel, particularly in and around the downtowns, suburban centers and neighborhoods. In most cases a small fraction of funds for highway construction and maintenance would be sufficient for good pedestrian facilities.

Private automobile will remain the dominant mode of transportation for suburban and other dispersed travel. Improvements to urban streets and highways are needed through better design and traffic engineering measures. In major corridors and within high density areas automobile use should be discouraged through various

regulatory measures, parking controls and high quality transit. Pedestrian malls and networks should be opened on selected streets in shopping and business areas from which automobiles should be eliminated.

Buses are and will remain the basic mode of transit in low-to-medium density areas. They provide all transit service in small cities and, in combination with higher capacity modes, in all medium and large cities. Bus service should be greatly improved by provision of some on-call service (dial-a-bus) in very low density areas, provision of bus lanes in congested areas, different types of express services on freeways and arterials, and technological diversification (articulated buses for heavily traveled routes, trolleybuses for hilly terrain, etc.).

Light rail transit is a mode which has been getting rapidly increasing attention. Many European cities have very successfully utilized this mode, consisting of spacious, comfortable, quiet rail vehicles operating mostly on private rights-of-way, but with the capability of also using an arterial or street where necessary. Light rail provides considerably higher service quality than bus, but requires much lower investment than rapid transit. It can be made technologically compatible with the latter and upgraded into it gradually, as funds become available.

As the only mode which has been proved efficient in filling the large gap between buses and full-size rapid transit, light rail is an excellent solution for most medium-sized cities, as well as for many corridors in large cities. Advantages of this mode are now being recognized and many of our cities should carefully examine utilization of its considerable potential. This mode is now under construction in Edmonton, Canada, in advanced planning in Dayton, Rochester and Toronto, and under consideration in many other cities.

Rail rapid transit is the highest quality transit mode which can be successfully used in many of our cities. Statements that rapid transit is justified only for volumes of 20,000 - 40,000 persons per hour are incorrect since some of our most successful systems (e.g. Cleveland, Lindenwold Line in Philadelphia) carry only 6,000 - 9,000 persons per hour. While in many cities extremely high investment prevents construction of adequate rapid transit networks, this is not true for all cases. Potential role of rapid transit and its investment cost vary greatly with local conditions. A number of our cities will find this mode feasible when its long life and strong influence

on urban development are taken into account.

Another, probably the most important factor which should be considered in selecting modes, is that rail systems, with their high performance, reliability and strong image, attract substantially higher patronage than buses. This is known from ridership trends on different modes as well as specific case studies.

New modes, such as "people mover systems" and "personal rapid transit", have presently no potential to provide any significant improvement over existing modes, primarily rail. High potential lies in fully automated operation, which would allow high frequency service without cost increase. Full automation, however, is not related to specific technology and it will be achieved much easier on rail systems than on the new modes which have numerous other technical and operational problems and deficiencies.

### Conclusions

Major efforts are needed toward reorientation of urban transportation. The new approach must be oriented toward the total transportation system and long range plans should be developed free from existing conditions which prevent progress. Thus, one of the goals should be to devise mechanisms for better cooperation among agencies which are in charge of different modes; another, to insure that transit agency boards have adequate knowledge about urban transportation; further, labor relations should be changed so that the transit labor unions take an active role in promoting transit (and thus increasing their membership), rather than maintain conditions which lead to strikes which are damaging to all concerned, but mostly to the "third party": the public.

Numerous immediate, low or moderate cost improvements can be made, but they should not detract from efforts toward planning long range, more permanent solutions. Major public works which our economy needs can be applied to transit improvements rather than construction of additional highways for which the public will then be advised not to use too much in order to conserve fuel!

The need for action is obvious; the opportunities are numerous; rational urban transportation policies should show the directions for progress.