

# The Role of the Automobiles in Future Urban Transportation

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Over 40 years ago, here in Indiana, a survey was made of ownership of some of the "luxuries of life"—radios, bathtubs, refrigerators, automobiles, so forth—and of consumer plans to acquire these in the future. One interviewer was puzzled when a white-haired old lady, who didn't own a single one of these appliances, said she planned first to buy an automobile. He probed further:

"Why would you buy an automobile when your home doesn't even have a bathtub?" he asked.

"Sonny," she replied, "you can't go to town in a bathtub!"

The important truth in this story is that mobility—the means of "going to town" when you want and in the style you want—is as real and important a part of our standard of living as inside plumbing.

The role of the automobile in urban transportation is linked inextricably to a standard of living which has risen remarkably in the past generation and appears now to be due for even more remarkable improvement in the future.

This upward trend, as projected by the Ford Foundation's "Resources for the Future" project, shows that *in constant 1960 dollars* the personal consumption per household in this country has gone from an average of \$4,500 in 1940 to \$6,250 in 1960. By 1980 this value will reach \$9,000 and by the year 2000 will be at \$13,000 per family per year.

Stated another way, the *average* family in 1980 will have a standard of living equal to that now enjoyed by the top 20 percent of families. In the year 2000, the average family's standard of living will be equal to that of only *six percent* of today's families.

This rising standard of living affects the demand for transportation service both directly and indirectly. Since a very high percentage of all urban trips (about 85 percent) start or end at a residence, the pattern of residential development is a key to the kind and amount of transportation service we need. I think everyone is aware of the pattern residential

development has followed since the end of World War II. It is popular in some circles to call this development "urban sprawl." The term connotes an awkward, unnatural and, somehow, anti-social growth.

Another title for this housing style is "owner-occupied, single-family residence." That doesn't sound quite so subversive and has the further advantage of being fairly accurate.

As the current popular song claims, these houses may all be made out of ticky-tacky and they may all look the same, but they are, by and large, owner-occupied. A larger and larger proportion of our families are in economic strata where they can afford the most precious commodity—privacy in their private lives. Two-thirds of urban families own their own home now. At the turn of the century, the figure was one-third.

And these homes are predominately single-family, each surrounded by green insulation strips. The result is a much lower density in people per square mile. The density in the five boroughs of New York is roughly 25,000 people per square mile. Density in the post-war development around most of our major cities seldom exceeds one-tenth of this value. As a result, while urban population increased one-third in the decade 1950-1960, land area for urban development doubled!

Many say that this low density is wasteful. It wastes land; it calls for greater expenditure for water, sewer and power lines and, above all, for transportation.

This argument about waste reminds me of the New Yorker who purchased land in Vermont and hired a local carpenter to build a summer home following the plans of his city architect. Some months later, the builder called to report, "Well, I got'er built, and I saved you a pasel of money too. That dumb fool of a New York architect was so green he went and put two bathrooms in the same house!"

Well, quarter acre lots *are* wasteful. Two bathrooms are wasteful. Separate rooms for eating and sleeping are wasteful too. It depends on your basis of comparison and, above all, your ability to pay for this standard of living.

Currently, and by the best estimate for the future, we are able to afford this living style and I suggest that the trend to lower urban density, far from reversing, will continue and accelerate. Any effort to thwart this trend in the name of greater civic economy or, more specifically greater *transportation* economy is, I feel, doomed to fail. For the main emphasis of what I have said is that transportation is not a *cause* in urban affairs; it is an *effect*. People may build their home in one sector rather than another due to transportation accessibility, but the main choice—to build at all—is the independent variable.

With one end of most urban trips anchored in an increasingly dispersed residential area well suited to individual automobile transportation, the typical city is faced with a seeming paradox. For the *major* destination of these trips is a crowded central business district designed for and well suited to mass transportation service. Not only are the converging transportation arteries difficult to expand but, once the automobile is delivered to the central district, there is still the awesome problem of parking.

The existing investment in buildings and the price of downtown real estate, encrusted with values of a bygone era, are so great that it is difficult to envision serving this section of a *large* urban area by automobile transportation alone.

It would appear that something has to give and, in fact, something has. I can recall when the downtown area was a principal center for retail food marketing. This function of downtown has about disappeared in our larger urban centers. Similarly, the dry goods and department stores have followed their customers to the suburbs.

Most retailers in my area speak now of their "downtown branch." This change is history. So, for that matter, is the move of wholesaling and warehousing from the center to the rim of urban areas.

Other shifts are taking place. There was a report last week quoting the National Restaurant Association to the effect that declining dinner business has forced a net reduction of 20,000 restaurants in the country in the last two years. The report goes on, "Population shifts and changing habits are playing havoc with the dinner business of restaurants in the big cities. People dine at home more or in new suburban restaurants. There has been an upgrading in the urban and finer suburban and highway roadside restaurants going after the dinner trade."

Perhaps the most significant portent of the future is the move of more and more office-type employment out of the downtown area.

I live outside Washington, D. C., in what a few years ago was termed a typical bedroom community. The largest taxpayer in the county was, until a few years ago, a country club.

Two years ago an insurance company office was built within a mile of my home—six miles from the central business district. Now that building is being doubled in size and all but a token downtown office is being moved to the suburbs. Last year, a new  $\frac{1}{4}$ -million square foot medical office building opened a mile farther out than my home.

Foundations are now being dug for a 19-story office building, again six miles from the traditional central business district. These are but isolated examples of a general trend.

Montgomery County, of which I have been speaking, now has 82,000 jobs, contrasted to 56,000 workers living in the county and commuting to the central city! This trend in the dispersal of work places is probably the most significant single influence on not only the type but the pattern of future urban transportation systems. These jobs in the suburbs are filled not only by residents of that suburb. There is significant commuting from one suburb to another and from the central city out to the suburbs to work.

Our traditional pattern of urban transportation facilities has concentrated service on the central business district. This is true not only of mass transit systems, but of street systems of the past and the freeway systems now under construction. The future seems to call for a far more evenly spread, ubiquitous transportation network than the "spider web" patterns now envisioned.

The examples I gave are for one city, but they seem to be typical or even a little low. The Census Bureau has just released a compilation of the journey-to-work data obtained in the 1960 census for the 100 standard metropolitan areas of over 250,000 population. According to these figures a little less than one-half of the workers in a typical metropolitan area live and work in the central city; about one-quarter both live and work in the suburbs; it is only the remainder who commute—16 percent commuting "in" and another 7 percent commuting "out." It is time that we recognize this changing pattern in our urban transportation thinking.

Mr. Richard Scammon, director of the census, made this point in a recent interview reported in *U. S. News and World Report*:

"It's interesting that in urban affairs in America we tend to be a few years behind the facts. We tend to think of the city still as a sort of hub with spokes that go out into a suburban and rural countryside. Actually, the 'city' now is a whole group of communities in a metropolitan complex.

"I was most intrigued, for example, in looking over census reports, to see how relatively few of the people who live in Nassau and Suffolk counties go into New York City to work. They don't. They work right where they live."

I would like, again, to use Washington data to point out the role of the automobile in these various work trips. The data show that for home to work trips entirely within the old central city, only 34 percent are by car. Commuting to and from the central city is about 60 percent by car, as are internal work trips in the inner suburbs. The newest, outer suburb, however, relies on the automobile for over 90 percent of

its work trips, as do those trips from one suburb to another. For these, the low density of both home and work place make individual transportation the logical answer.

The trend to a more dispersed pattern of trips from a lower density of residence to a lower density of places to work and shop appears clear. This, of course, does not mean that the central business district will die out or that the radial facilities being built will be wasted. For, probably the most important single change in urban areas is, simply, total growth. Urban population expanded 30 percent in the past decade. Estimates for the future indicate that the growth will continue but at a rate between 20 and 25 percent per decade. For one thing, the migration from farm to city, which has averaged over a million a year since World War II, has begun to decline. In addition, our birth rate has dropped.

But the further increase in the size of urban areas will probably keep the absolute number of CBD trips about the same as today. This has been the trend in the past. The number of people entering the Chicago loop, for instance, is about the same now as in 1926, although the area population has increased 50 percent. The big change will be the declining *relative* importance of CBD trips against the suburban cross-town trips which will increase rapidly.

Providing adequate facilities for these non-radial metropolitan trips will, I believe, be our main challenge after the Interstate System is completed. We have talked, so far, about urban transportation in terms of trips. But another dimension is required to weigh the need for transportation service. Transportation service is measured in terms of person-miles not trips. The trend to lower urban densities affects not only the production and orientation of trips, it also increases their length.

Wilbur Smith in his excellent study of "Future Highways and Urban Growth" has shown that about seven vehicle-miles of urban highway travel are currently generated per capita per day. It is reasonable to expect that this will increase to about 11 miles per capita per day by 1980—the Automobile Manufacturers Association in testimony before Congress last year pegged the figure at 11.2.

Added population, lower density, higher incomes, longer trips—when all these factors are multiplied together, we come out with about 760 billion vehicle-miles of urban travel by 1980, as against 370 billion in 1963.

If the automobile is going to play this predicted role in future urban transportation, we are going to have to provide sufficient highway capacity. Certainly the Interstate System is a logical and needed first step; but it is only that. A conservative estimate of urban freeway needs

by 1980 is 16,000 miles. The Interstate will provide little more than half that mileage.

Planning for this need is a major job. Not only the technical and financed aspects but the whole political and philosophic approach to highways must be examined. We should forget, for instance, the concept of "state highways and their *urban extensions*." (It might be more appropriate to consider "state highways and their *rural extensions*" since by 1980, 60 percent of highway travel will be urban.) But, truly, we have to re-examine our political and administrative tools to get this needed job done. Suburban political entities that mistrust the central city and ignore their neighboring suburbs must find a way to work together. It is their transportation future which is at stake. In some instances, it would appear that the county is a logical unit to provide the leadership in this area.

The problems inherent in providing the needed urban highway capacity are major. Highway building involves changes and, as you know, change is always resisted by some. The necessity to look ahead to the community's future requires thinking about what the community wants to be—what its goals are. Certain compromises are inevitable and one of the most difficult is the balance between private and public transportation.

I read recently a transportation policy statement which said first that the total system should be the most economical possible to provide the desired level of service. I certainly agree with that. It went on to say that each individual should have a freedom of choice between comparable private and public transportation modes. I agree with that too, but as I rack the two side by side, I begin to realize that you can't have your cake and eat it too! You can't have duplicate systems and, at the same time, maximize economy. One of the most serious aspects of the greater reliance on private automobiles has been the decline of public transit. And, yet, we need a public transport system in any large metropolitan area.

All of the figures I have used so far in this paper have been averages, but averages don't tell the whole story. In 1980, according to Census Bureau forecasts, there will be 76 million people either under 15 or over 70 years of age. This is 30 percent of the population, a large proportion of whom won't be able to drive their own car. There is another significant group. As some Washington economists have recently determined, roughly one out of ten American families is in the bottom 10 percent income bracket. I expect this ratio will remain true. We will continue to have the disadvantaged, who cannot afford the transportation style available to the "average" family. Shall they have nothing?

Some years ago, I lived through a summer in a large metropolitan area without public transportation due to a transit strike. Actually, the "average" resident had little trouble—he arranged a car pool or took the family car to work and postponed shopping trips to the week-end. There were, however, some cruel and important effects in some areas. Welfare recipients could not transport their food dole home without paying a scalper's price. Hospital service declined to a dangerous level. As you know, hospital workers are a particularly low paid class and it was not feasible for a kitchen helper or aide to pay perhaps \$5.00 in cab fare to get to and from a job that paid \$9.25 per day. I know personally of cases where these people worked 16 hour shifts in order to pay their higher transportation bill and still have a subsistence take-home pay.

Perhaps we can let transit go out of existence and accommodate these special cases by other adjustments—by adding a taxi-cab allowance to welfare payments for instance. Somehow, I don't believe so, however. I believe that a generally available public transportation system will continue to be an urban necessity. I also tend to think that this public transport system will, when it finally evolves, look little like the high capacity, high capital-cost systems of rapid transit currently espoused as the answer to the urban problem.

The pattern of origins and destinations will be just as dispersed for the nondriver as for the driver, and his needs won't be met by providing a limited number of high capacity channels.

I don't know what this public transportation system will look like, although I suspect it will resemble a bus—possibly a small bus—running on the streets and highways of the city.

Similarly I don't know what the "automobile" of the future will look like, although I suspect it will have a family resemblance to the car of today. I am convinced, however, that individually operated transport and a network of roadways permitting the urban resident to go where he wants when he wants with comfort and dignity will grow in use right along with our expanding economy. The role of the automobile in future urban transportation will be as the star, not as a "bit player."