

Forecasting Growth Parameters in Smaller Urban Areas

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In considering the data needed for forecasting growth parameters for use in transportation planning in smaller urban areas, it is important to realize that certain aspects of the future are incapable of prediction under any circumstance. More socioeconomic data will not eliminate this problem. However, other aspects of the future are not only predictable but determinable if adequate public policy tools are used, and they should be sought through an evaluation of alternative plans and implementation of the preferred plan. The socioeconomic data needed for this are different from and more modest than those needed for detailed forecasting.

There is a need to forecast socioeconomic and land-use parameters for use in planning transportation improvements in smaller urban areas. The purpose of this paper, however, is not to discuss specific data sources, methodologies, or techniques to be used in such forecasting. Rather, this paper suggests some perspectives about the nature of such forecasting, its relationship to policymaking, planning, public decision making, and the level of data detail that is possible or justified for these purposes in the light of those perspectives.

NATURE OF THE FUTURE

There are two characteristics about the future that must be kept in mind as we look at the question of socioeconomic forecasting in smaller urban areas. One characteristic is that the future is partly unforeseeable, no matter what, and the other is that the future is partly determinable through our own actions.

That the future is to some extent unforeseeable and unknowable, even with the very best of data, analysis, judgment, and insight, seems to be part of the nature of the world in which we live. There are always enormous surprises in store for us—surprises that are physical, social, economic, meteorological, biological, and so on. And despite the recent advent of larger computers and more complex systems—analyses techniques for modeling the future, the surprises confronting society seem, if anything, to be getting larger rather than smaller. The civil rights and equity revolutions of the late 1950s and early 1960s, the overriding environmental preoccupations of the late 1960s and early 1970s, and the sudden and shocking awareness of energy limitations in the middle 1970s—all of these were essentially unforeseen developments. Economists, with all of their government statistics and sophisticated indicators, are in constant disagreement about what will happen to the economy during the next three months, not to mention next year or 20 years from now. Although it is interesting and often helpful to speculate about the way things will be 10 or 20 years in the future, we really cannot know as much as we would like about the changing values, life-styles, and technologies, the limiting environmental factors, and the compelling social issues that will prevail then.

So it does not require very much humility to admit that we cannot really know what the future size, density, composition, or distribution of population, employment, and land uses will be in a given urban area 20 years hence.

At first, it might seem that this would be less true of small urban areas than of large ones—that a smaller

urban area is somehow less complex, easier to understand, and therefore more predictable than a larger one. But in a way the opposite is true. An increment of a given magnitude coming into a small urban area has a much greater percentage impact, in primary effects as well as in ripple effects, than it would have in a large metropolis. If we guess wrong about a 250-employee plant moving into Atlanta or Chicago, it is not as critical as it would be in a smaller urban area. So, in that sense, a smaller urban area is even more subject to the uncertainties of the future than a large city is.

The second important point about the future is that the part that is foreseeable is not entirely an independent variable that can be forecast as if it were some externality over which we can have no control. What we say and do today about the future can often have an effect—sometimes a major effect—on what that future will actually turn out to be. The very roads and bridges that we plan and build today will help to determine how many people and jobs we will have 20 years from now, what kind they will be, and how they will be geographically distributed. That is, transportation not only serves a community by accommodating trip demands but it also plays an important role in shaping the community for better or for worse. This is true not only in large cities where there are more choices as to modes (bus, rail, automobile, and such) and capacity (a 10-lane freeway versus no freeway) but also in smaller urban areas, where a few decisions as to the width and placement of roads and access points can literally change the face of the community. In the area of real estate and development decisions, location is the primary factor and accessibility is a chief component of location. When we design and locate roads, we are influencing future private-development decisions.

NATURE OF PLANNING FOR THE FUTURE

If the above observations are true—that is, if the future is (a) partly unpredictable no matter what we do and (b) partly determinable by what we do today—what conclusions does that lead us to draw about forecasting as a part of the planning process, particularly as it relates to transportation planning in smaller urban areas?

First, it suggests that we should not put too much stock in end-state planning—that is, planning for some future year (e.g., year 2000 or year 2020) by which time the community will presumably have grown to some foreordained or predicted condition, all transportation facilities will be in place, and things will fit together nicely. Experience suggests that this day will never come and that planning for some cross-section of time 20 or 30 years away is at best a helpful analytical device (as long as we do not take it too seriously). This means that planners and decision makers sometimes have to settle for incrementalism—that is, for doing the next thing as well as we can. In breaking decisions down into smaller and more manageable portions, then, a long-range view becomes useful not as an immutable picture of the future but because (a) it can give us a better reading on short-range decisions and (b) major capital-investment decisions must necessarily be based

on some long-range assumptions simply because of their long useful life or amortization period.

A second conclusion we can draw is that we should sometimes consider flexibility *per se* to be a positive attribute in selecting alternatives, simply as a hedge against uncertainty. That is, if we have a choice among several transportation investment alternatives that are equal in other respects, we might well select the one that is capable of accommodating a larger number of possible but unpredictable eventualities and is therefore least likely to paint us into a corner.

A third conclusion is that, because part of the future is unpredictable in any event, we should make as much use as we can of the part that is not only predictable but determinable through our own actions. As transportation facilities shape as well as serve the community, we are missing a real opportunity if we base our planning largely on uncertain forecasts rather than on what we want to happen.

This last approach not only increases our chances of being right; it also takes advantage of at least some opportunity to plan the future, rather than just reacting to some shaky prediction of what it will be. But it also requires a healthy dose of realism. Transportation facilities can shape the community only if they are used in concert with an overall community planning and regulatory program that includes land-use planning, zoning, subdivision controls, coordinated water and sewer extensions, and capital-improvement programming. If some reasonable combination of these other tools is not available, transportation planning cannot shape the community all by itself. Transportation decisions will still affect the future, but not necessarily in a cohesive or desirable fashion. In short, transportation planning cannot make up for the absence or lack of coordination of these other planning tools.

On the other hand, it is almost impossible for land-use planning, zoning, and utility-extension policies to guide and shape growth if the transportation planning process is not supportive. In other words, transportation planning cannot shape a community all by itself but it can undesirably affect other efforts to do so. Of course, there is a limit to how far you can go in making public decisions reshape the future, even if it is assumed that transportation planning, land-use planning, and the various implementation tools are all being used in mutual support of each other. That is, in a society based on private enterprise, public decisions are more capable of bending trends than of reversing them.

A fourth conclusion that grows out of these observations about the nature of the future is that, beyond a certain point, the collection and analysis of additional data are not really useful. Too often, we feel uncomfortable with the intrinsically uncertain nature of the future, and so we try to overcome it with more data—we disaggregate numbers that are not worth disaggregating, we extrapolate and interpolate numbers that are not worth extrapolating or interpolating, and we manipulate data that are not much more useful after being manipulated than they were before. And the more time we spend looking at our numbers and forecasts, the more they take on a life of their own that we start to believe in. Worse yet, we go out in the field and spend more money collecting even more data. And when we

are through, that part of the future that was intrinsically unknowable is still intrinsically unknowable. We do not really know what things will be like in the year 2000 or the year 2020.

As for the other aspect of the future—the part that is determinable through our own actions—we need some data with which to evaluate alternative plans and pick the one we want, but we do not need huge amounts of data because we are not trying to predict in detail where we will be. Instead, we are deciding in policy terms where we want to go.

In summary, then, transportation planning for smaller urban areas should not just be based on a prediction of "what will happen anyway" nor should it be based, at the other extreme, on a utopian version of things that would be good to have whether they are achievable or not. Successful planning programs usually fall somewhere between these two extremes. They are bold enough to question a trend if it is leading toward an unacceptable result, but they are also practical enough to stick to reasonable possibilities. Of course, people will often disagree as to what is both desirable and possible. That is one reason for including two or more alternative plans in the planning process. This allows you to put together different combinations of desirability and achievability and see how well they balance. But the main point is that, even though socioeconomic data are a necessary part of the quantification aspects of transportation planning, they should not be the overriding factor in what is done or how or when it is done, nor can they substitute for goal-directed thinking, judgment, or common sense.

Forecasting the future has changed as new issues have been identified and defined. Twenty years ago, forecasts and plans stressed efficiency; ten years ago, they stressed equity; today, forecasts are concentrating on environmental consequences. The next forecasting era to emerge will surely emphasize energy limitations.

The workshop participants considered the issue of the time frame associated with the arrival of the forecast size and allocation and determined that this is not too important because most growth areas will eventually reach the population estimated. For example, private decisions in smaller urban areas affect the shape and density of the area more than governmental decisions do. The ability to immediately assess the situation and respond quickly may be more important than the development of planning horizons.

Transportation improvements and new facilities will be serving the public for many years longer than most forecast periods. However, neither transportation facilities nor planning activities can eliminate the necessity for effective zoning, official maps, subdivision ordinances, and other pertinent ordinances.

Transportation planners must accept the uncertainty of the future and forecasts. For short-range planning purposes, staffs should concentrate on land-use changes. For long-range purposes, the most important variables will be population, employment, incomes, and the preceptions of elected officials.

Although, in some areas of the country, populations are doubling in size every 10 years, other areas are experiencing negative population growth. Planning procedures should reflect the local situation and emphasis; for example, systems planning is needed in a growth area but site-impact analysis is needed in a nongrowth area.

Finally, it was noted that many smaller urbanized areas are located on rivers that have older bridges that lack the capacity or strength for either current or future traffic. The issue was discussed whether new bridges should be placed to enhance the transportation system and resultant land-use patterns or whether the land use should be planned and the bridge located to enhance the plan.