

National Transportation Data Needs for the 1990s: Transit Strategic Planning

SAMUEL ZIMMERMAN

The data needs associated with national transit strategic planning for the 1990s are outlined in this paper. The major new issues that transit strategic planning in the 1990s will likely deal with are addressed. Based on an examination of these issues and available data resources, the need for additional ongoing data-collection efforts in support of national (and local) strategic decision making are noted.

The creation of the Interstate Highway Program in 1956 set the tone for all federal grant-in-aid to transportation programs that followed. Construction of the Interstate system is supported by user fees placed in a trust fund. It is administered by an arm of the federal government, but actual planning and construction is carried out by the states using a common set of standards that they developed, both in cooperation with other states and in cooperation with the federal government. Finally, reflecting the national interest in defense, interstate commerce, and travel, the clear majority (90 percent) of the cost of the Interstate system is paid by federal taxes.

For such arrangements to work, whether they are for construction of a highway system, the implementation of new public transportation services and facilities, or a new airport and airway system, a variety of data must be available to support federal strategic decision making—that is, decisions on the nature and magnitude of federal transportation programs. This information, consistent with the nature of strategic planning, must focus on those factors related to the need for the basic “product” that the federal government provides, financial assistance.

For public transportation, four major types of data are needed for federal strategic planning. The first consists of the factors that influence transit demand, the second describes system extent, the third, describes system operations and related costs, and the fourth, describes system condition, in no particular order. A number of data resources are useful for identifying changes in the factors influencing the demand for public transportation. One is obviously the decennial Census and others include national surveys such as the Nationwide Personal Transportation Survey (NPTS).

Most of the second and third types of information, describing the extent of the nation's transit systems, their operations, and costs, have come from the data collected under the rubric of “Section 15,” a part of the federal transit law requiring the collection of a uniform data set as a prerequisite for receiving federal assistance.

The Section 15 data set includes, for each transit operator in the country, data describing the size and composition of

the vehicle fleet, extent of fixed-guideway facilities, levels of service provided, accidents and fatalities, operating and maintenance costs, ridership and revenue, subsidies, and employment. All can be stratified and summarized a number of different ways—for example, by operator size and mode.

The Section 15 data set has been used successfully the past 9 years for national analyses of transit productivity, efficiency, and effectiveness. Many of these studies were used in preparation of the biannual reports to the Congress on the *Current Performance and Condition of Public Mass Transportation Systems* required by Section 308 of the Urban Mass Transportation Act (UMT Act).

To assess whether or not Section 15 will be adequate for the national transit strategic planning of the 1990s, one needs to know what new issues are likely to emerge during the period that the planning will cover.

The recent series of outreach meetings held around the nation in support of the preparation of a National Transportation Policy (NTP) suggested, among other things, that the emphasis in federal surface transportation investment should shift from new construction to the restoration and upgrading of the existing transportation system. It also identified the need for a stronger federal role in promoting transportation safety. Because these are relatively new federal policy emphasis areas for transit, the discussion below will focus exclusively on their data needs from the perspective of national strategic planning.

REHABILITATION AND REPLACEMENT

In the wake of the great wave of public takeovers of private transit operators in the late 1960s and early 1970s, a large number of new maintenance and operating facilities were constructed for all modes. In the mid- to late-1970s and on into the 1980s, a large number of new rail systems began operation. Beginning with the first gasoline crisis in 1973 and accelerating after the second in 1979, transit fleets were expanded. Much if not most of this new construction and expansion was supported with federal funds.

Applying any set of rules or standards on facility updating and equipment and vehicle replacement to the transit systems, whose history is briefly noted above, suggests that the decade of the 1990s will mark the beginning of a significant period of transit rehabilitation and replacement. The precise implications for federal transportation programs are somewhat unclear.

Rail transit modernization requirements were examined as part of the congressionally directed Rail Modernization Study completed in 1987. However, the basic thrust of that study

was to determine the cost of bringing the nation's then-existing rail transit systems, most of which had originally been built decades earlier with nonfederal funds, to modern standards.

The early 1980s time frame of that study meant that no attention was paid to the rail systems which had been constructed more recently largely with federal funds. Also, the study was a single-time effort, meaning that the condition data collected for the newer, expanding systems that were open at the time (e.g., Washington and Atlanta), is becoming rapidly dated. Finally, no comparable evaluation of fixed facilities for other modes (e.g., bus operating and maintenance bases, malls, fringe parking, ferry terminals, etc.) was done.

Assessing the magnitude of future rehabilitation and replacement activities for all modes and how they will be distributed in time and by geography requires a significant amount of system condition data. Unfortunately, these data are not now routinely collected at the national level, and sorry to say, much of it may not be available even locally.

As an example of this situation, in 1986 the Federal City Council (FCC), a group of key business and professional community leaders in Washington, D.C., completed a study of transit finance in the Washington region. The purpose of that strategic planning effort, undertaken in cooperation with local officials and the Urban Mass Transportation Administration (UMTA), was to make estimates of all outyear costs associated with public transportation in the Washington area. The idea was that once this estimate was in hand, local officials could then assess the ability of existing revenue sources to handle forecasted costs, and begin the process of developing new ones if needed.

Perhaps the most significant work done as part of that study was to inventory all the region's transit facilities and equipment in enough detail to estimate rehabilitation and replacement costs over time. This involved the classification of all capital resources into about 50 categories, estimating their number by date of acquisition or beginning of service, estimating the dates for either major rehabilitation or replacement, and the respective unit costs. Although the Washington area already had a transit capital plant worth more than \$4.5 billion and an approximately \$500 million annual operating and maintenance budget in 1986, the FCC study marked the first time that such an inventory had been attempted.

The study found that by the end of the century, annual rehabilitation and replacement requirements would go up by more than 400 percent in real dollars to a point (\$160 million in 1986 dollars) where they would be equivalent to about 35 percent of the total 1986 annual local transit operating and maintenance cost. Subsequent to the FCC study, the Washington Metropolitan Area Transit Authority (WMATA) has undertaken a much more detailed one of its own, and moved to establish a sinking fund to pay for the outyear replacement and rehabilitation costs the study will identify.

Similar studies have recently been completed in Chicago, Philadelphia, and Baltimore; New York had done one earlier. Only Baltimore did the type of detailed inventory accomplished as part of the FCC study, although an engineering assessment of the condition of the Chicago Transit Authority heavy rail system is now underway. Unfortunately, there was not a consistent format for the data generated by these studies, nor were consistent assumptions and methods used to produce it.

Clearly, if the type of disinvestment in the nation's urban transit systems that occurred prior to 1970 is to be avoided in the future, local financial planning for new transit capital investments and for subsequent operations must reflect these costs as early as possible. Federal government strategic planning data needs are different than those for local financial planning, but it still must have better information on system condition than is presently available through Section 15.

A national transit system condition data set, comparable to that used by the Highway Performance Monitoring System (HPMS), would describe the number, size, and condition of fixed transit facilities, as well as all vehicles and significant ancillary equipment. Acquisition and operation initiation dates would be collected along with the expected dates for major overhauls and replacement based on consistently applied standards. Estimates of the costs associated with rehabilitation and replacement might also be included.

Care would have to be exercised to ensure that the data collected was not more detailed than necessary to support national-scale planning and policy analysis. This could be assured by using a sampling procedure similar in concept to that utilized by HPMS, collecting the data on a periodic basis but not every year. The triennial reviews required by Section 9 of the UMT Act might provide a good opportunity to keep such a national system condition data base current.

SAFETY AND SECURITY

In terms of the safety information needed for national strategic planning, although accident and fatality data is being collected under the auspices of Section 15, there is little national information available on accident causes and incidents of crime, particularly as related to substance abuse. In addition, there is no consistency between the data collected for Section 15 and that available from other federal accident and safety reporting systems (e.g., the National Highway Traffic Safety Administration's Fatal Accident Reporting System, "FARS," and National Accident Sampling System, "NASS").

Without a more comprehensive set of data on accidents and their causes, and crime against transit passengers, personnel, and property, it is difficult to properly identify important safety and security problems, formulate potential responses at federal and other levels, and evaluate them. The first attempt at improving this situation will be a redesign of the safety-related data being collected for Section 15 purposes. A semiannual drug program reporting system is also being established under UMTA's new drug rule.

SUMMARY AND CONCLUSIONS

The discussion identified transit rehabilitation and replacement and transit safety and security as increasingly important issues for the coming decade. It attempted to show the linkage between these issues and the information needed to support decision making on actions to address them at the federal level.

Unfortunately, local and state governments, the source of most national strategic planning data, are only now starting to assess transit system rehabilitation and replacement costs,

although their estimation should have been part of the financial planning which preceded implementation. It almost seems that the assumption in the 1960s, 1970s, and 1980s, when many of the new systems were being implemented and others expanded, was that the same financing arrangements which were in place for their implementation would be in place for their inevitable overhauling. However, if we have learned anything from the recently completed hearings around the nation in support of a new National Transportation Policy, it is that the financial arrangements that have served us so well in the past may have to be "renegotiated" in the future.

One reason for this change is that the focus of past federal transportation programs, to assist in implementing new services and facilities, will be shifting to the rehabilitation and replacement of existing resources. Because the proper balance between building new and maintaining old is rightfully a local decision, increased flexibility in the federal delivery system will be in order. Good information on rehabilitation and

replacement requirements will, therefore, be as important in the future as information on the factors influencing the need for new facilities and services was in the past.

At the same time, there is a growing recognition of the need for improved safety and security reporting systems, in part related to the nation's broader drug problem. Better data is needed to document trends in transit safety and security in order to correlate system and other parameters to the frequency and severity of incidents. With this data in hand, corrective actions can be formulated and analyzed.

In the case of both rehabilitation and replacement and safety and security, it is the task of local, state, and federal planning processes to produce needed data if good decisions are to be made by any level of government.

The opinions expressed above are those of the author and do not necessarily represent those of the Urban Mass Transportation Administration.