THE APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM: DEVELOPMENT FOR WHOM?

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The Appalachian Regional Development Act of 1965 (Public Law 89-4) created the Appalachian Regional Commission for the purpose of designing and administering "comprehensive plans and programs" for the economic and social development of Appalachia on a coordinated regional basis. This legislation, as amended, authorized the expenditure of $1.768 billion over a six-year period to treat the region's serious problems of low income, high unemployment, low educational achievement, and a comparatively low standard of living [*1*, p. 13].

Drawing upon the earlier recommendations of the President's Appalachian Regional Commission (PARC), the commission has adopted a strategy for development that is based on a bundle of public works programs. Among these programs, the highest priority is assigned to the construction of a regional highway network. Of the $1.768 billion that has been authorized in federal funds, $1.165 billion (66 percent) is committed to the construction of 2,700 miles of highways. Arranged in a series of 21 corridors providing a number of north-south and east-west linkages to the interstate system, this proposed regional system is the framework on which a nested hierarchy of health and educational services will be built. As the six-year period for development planning is ending with the current fiscal year, it is appropriate to consider the degree to which the regional highway system has advanced the program goals contained in the enabling legislation.

The Highway Program and Social Services

The Appalachian Regional Development Act, as amended, required the commission to view economic infrastructural investments and human resource programs as an integral part of overall regional planning. However, the federal funds authorized for the regional program have emphasized the construction of highways relative to human resource development. Less than 8 percent of authorized outlays, for example, is designated for demonstration health facilities and vocational training programs, in spite of the recognition given in the PARC report to the serious problems in Appalachia arising from underinvestment in educational programs and inadequate health facilities. The planning orientation of the commission is clearly toward public works projects.

This orientation is partially explained by the political bargaining which preceded Senate passage of the act. To avoid jeopardizing the bill at a time that the political climate favored national manpower programs rather than specific regional ones, as evident in the Economic Development Act of 1965, the authorized expenditures for human resource development were deemphasized [5, pp 60–66]. However, this explanation ignores the reality of the original PARC recommendation, which called for social service authorizations at a level of less than 30 percent of total expenditures. Hansen comes close to the heart of the issue when he attributes the bias toward public works projects to a preference among political leaders in Appalachia for programs which are tangible and cannot be geographically transferred by out-migration to other sections of the nation [3, p. 76].

Critics of this public works bias in program planning have been encouraged in the past two fiscal years by Congressional increases in non-highway allocations, especially in the area of vocational education. At the same time, Congress has been in the paradoxical situation of increasing the annual authorization for highway construction while substantially reducing the funds actually appropriated for the highway program. The result has been a shift in the relative weight of appropriated funds away from highway dominated funding to a greater equity with non-highway investments. It is not clear that this shift mirrors a growing skepticism on the part of the government as to the importance of highway investments as the basis for achieving developmentary goals. It may reflect little more than a temporary loss of confidence in the ability of the states to absorb the funds previously appropriated for highway construction. Several states, particularly West Virginia and Ohio, have experienced legal and political problems in meeting federal appropriations on a matching-funds basis.

Whatever lies behind the recent shifts in appropriated funds, nothing has changed the commission's commitment to the highway program as the basic framework for providing social services. Present plans call for the designation in Appalachia's 13 states of several urban communities, which are "strategically" located on the Appalachian Development Highway System, as centers to provide highly specialized health and educational services. These centers will be the foci for a nested hierarchy of social services throughout the region. The specialized hospital complexes in the major urban center will be linked by the regional highway system to smaller communities where the services of a general hospital will be provided. These communities in time will be linked to a larger number of rural districts where health centers or clinics will provide those health services which are frequently demanded. Similarly, a nested hierarchy of vocational and technical education services is planned, being equally dependent on the regional highway network [*4*].

An areal approach to the provision of social services is defended by the Appalachian Regional Commission as the only realistic way to provide needed educational and health services for hundreds of small jurisdictional units, each having a small population and limited tax resources. The commission advocates this type of program planning as a solution to the problem of upgrading education and health care in the more impoverished districts of Appalachia. It further contends that tying the social service programs to the regional highway system will strengthen the probability of successfully using infrastructural investments to achieve some regional income redistribution to rural districts [5, pp. 68-69, 87].

If the Appalachian Development Highway System is to be an instrument for the redistribution of income and the basis for providing social services to those areas least able to finance them, it is logical to expect an inverse relationship between per capita highway appropriations and per capita income, and levels of educational and health support. That is, those states with the lowest per capita incomes and the lowest levels of tax support to health and educational programs should be the major recipients of highway allocations in Appalachia. This association can be readily tested by linear regression analysis. The dependent variable is per capita funds authorized for corridor highways and access roads during the period FY 1966 to FY 1971 for those segments of Appalachia's 13 states. The independent variables are: average per capita income, average annual per capita expenditures by the government for education, and average annual per capita expenditures for health care and hospital services.

The results of the analysis are inconsistent with expectations. There is only a very weak ($R^2 = 0.16$) and statistically unreliable ($p > 0.10$) negative correlation between per capita highway expenditures and per capita income as well as per capita expenditures by the state governments for health and educational programs. This raises the possibility that the major beneficiaries of the highway funds have been those states with per capita incomes and governmental expenditures for health and education that are above the regional average.

The results of the regression analysis may be partially explained by the skewed allocation that has characterized federal-aid highway investments. Each state's annual allocation is directly related to its absorptive capacity. That is, the allocation is based on the amount the state is expected to absorb during a fiscal year for the design and construction of its share of the regional highway system. This absorptive estimate is based on the matching funds each state has available to commit to the highway program. Contrary to the commission's objective, this traditional allocative procedure bears little relation to the redistribution of income to rural areas or to the provision of social services in depressed districts. It may be that the matching-funds concept of federal-aid programs encourages a geographical pattern of investment that increases rather than decreases regional inequities.

The apparent contradiction between the commission's program objectives and allocations in the highway sector raises the entire issue of the distribution of non-highway funds. It is conceivable that in the political strategy of the commission there is intersectoral trading among the states. Allocations for non-highway programs could represent a trade-off to compensate those states, such as Pennsylvania and Tennessee, which have received relatively low per capita highway allocations.

If there is intersectoral trading among the states, there should be a negative relationship between per capita allocations for the highway program and per capita allocations for health and educational services. This possibility can be tested by linear regression analysis. The dependent variable is the per capita amount of Section 201 funds cumulatively appropriated for each state through FY 1971. The independent variable is the cumulative, per capita appropriations to each state of Section 214 funds for health and educational programs.

The results of the analysis are contrary to the notion of intersectoral trading. In contrast to expectations, the allocation of Section 201 funds for corridor highways and access roads is positively correlated ($r^2 = 0.74$ and $p < 0.001$) with allocations under Section 214 of the Appalachian Regional Development Act. This means that states, such as Kentucky, Maryland, and Virginia, which received high per capita allocations for the regional highway program also received high per capita allocations for educational and health programs. This relationship is consistent with the commission's program objective of using the highway programs as the basis for allocating funds for social services. Like the pattern of highway allocations, the distribution of Section 214 funds bears little relationship to the goal of income redistribution to rural areas or to the provision of health and educational facilities in those districts with limited tax resources.

A PROGRAM OF LOCAL PRIORITIES

Part of the problem in achieving the program goals of the Appalachian Regional Development Act may be attributed to the failure by the commission to promote the development of the Appalachian region on a "coordinated and concerted" basis. This is particularly true for the regional highway program. Nearly $1.165 billion has been authorized for the design and construction of 2,700 miles of highway in 21 corridors. The objective is to open up isolated areas having a development potential and to link such areas with the interstate highway system and other federal-aid highways in the region.

As of FY 1971, about $657 million, or

approximately 61 percent of the authorized funds, have been obligated, and approximately 33 percent of the system has been constructed or is under construction. An additional 20 percent of the system, estimated to cost $423 million, is planned for construction. At present levels of funding, approximately 53 percent of the corridors are either constructed or planned for construction. The commission estimates that the completion of the highway system will require expenditures of $3.85 billion, an increase of $2.65 billion over its initial estimation.

These higher cost estimates are, in part, a result of a more realistic determination of the actual material and labor requirements for constructing the Appalachian system. The initial estimates, submitted by the states, were frequently calculated by simply applying an estimated per-mile cost to the total mileage to be constructed. In several cases these average costs failed to fully consider the terrain features over which the corridor sections would be constructed. None of them provided for possible increases in cost during the projected construction period; a time when such costs have risen at an average of 7 percent per annum. The General Accounting Office (GAO) estimates that these unrealistic estimates resulted in a $600 million underestimation of actual construction costs during the six-year period [2, p. 24]. Some additional cost increases have resulted from program changes to increase the number of four-lane highways, new federal requirements on safety standards, and relocation assistance to persons displaced by highway construction.

The sizable discrepancy between present funding levels and the estimated costs for completing the system means that the construction of large segments of the regional highway network have been postponed indefinitely (Figure 1). According to GAO, major improvements and new construction are required on 20 of the 21 corridors. None of those 20 corridors are planned for completion in their entirety and several segments which have been constructed, or are planned for construction, will not be linked to the Interstate Highway System [2, pp. 9–11]. For example, the regional plan calls for two major east-west corridors (D and E with I-79, and H with I-79 and I-66) providing access to Baltimore and Washington. Neither of these corridors is planned for construction in its entirety, and major sections of corridor H have been indefinitely postponed. Similar examples of deferred construction on major corridors are evident in Ohio where segments already constructed will not be connected by corridors C and D to either the Columbus or Cincinnati metropolitan areas.

The GAO concludes that present and planned construction will not link major urban centers in Appalachia to the interstate highway system, provide access to key markets surrounding the region, or increase accessibility to new job centers both in and around Appalachia [2, pp. 14–16]. While it is easy to quarrel with the merits of achieving some of these linkages, it must be recognized that the commission approved the 21 corridors so as to accomplish one or more of these objectives. Rather than constructing a regional highway network, the commission is obtaining an end product that is a patchwork of isolated highway segments which provide no regional basis for coordinated development.

The segmented pattern of the highway system is a product of local rather than regional priorities. In allocating Section 201 funds, the commission has permitted each state to establish its own construction priorities regardless of whether or not they served any regional program goals. Each of the states has been permitted to use federal funds to construct the highest priority projects within its own territory. At no time did the commission attempt to insure that these local priorities would result in the construction of a complete regional corridor. There is no evidence that the commission established construction priorities on a regional basis or attempted to deter-

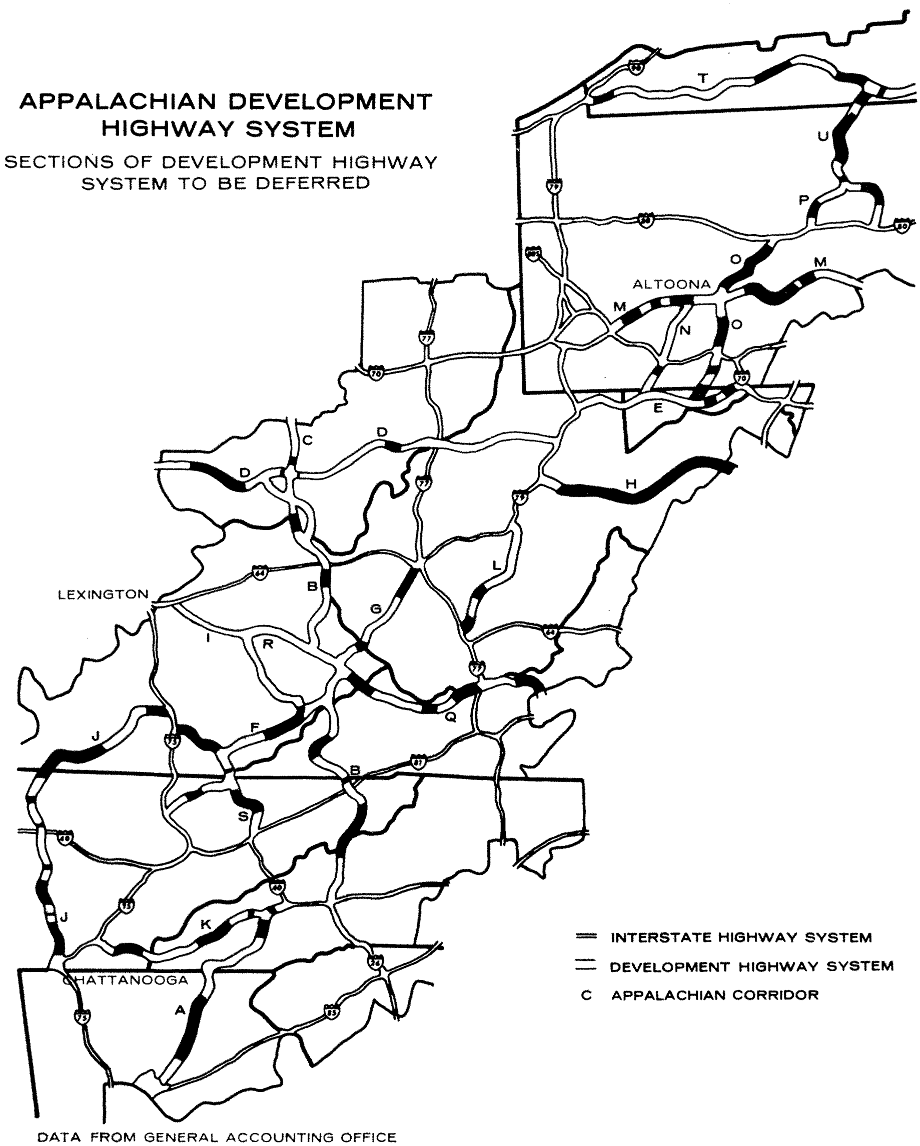

Figure 1.

mine if the expenditures by the states would efficiently contribute to achieving regional program objectives.

As a result, the Appalachian Development Highway System is neither a highway network nor a regional system. Perhaps it is most appropriately described as a program to increase local mobility in and around urban centers through the construction of isolated segments to meet local needs. Typical is the construction around Altoona, Pennsylvania (Figure 1). Corridors O and M are designed to connect Altoona to I-76 (increasing accessibility to both Pittsburgh and Philadelphia) and to I-80 (increasing accessibility to New York City). In actuality, the segments which were constructed, or are planned for construction, only increase local commuting in the Altoona area. The construction required to provide access to I-76 and I-80 has been postponed indefinitely. A similar example is corridor J, extending north from Chattanooga to I-75, south of Lexington. Several sections of the corridor, ranging from three to four miles in length, are constructed where there are urban communities. These sections will increase local mobility and ease the commuting problems around Chattanooga. However, all sections of the corridor between the urban communities have been postponed indefinitely.

It appears that the planned construction of highways in Appalachia will further improve local accessibility and provide benefits by easing local traffic congestion. Although the House and Senate Committees on Public Works recognized that the developed highways would ease traffic congestion in parts of Appalachia, these highways were not to be designed or constructed with that objective in mind [6, 7]. They were to be instruments for regional economic and social development.

CONCLUSION

In the six years since the passage of the Appalachian Regional Development Act there appears to be a serious contradiction between the original objectives of the Appalachian Highway Development System and the results achieved to date. The Appalachian Development Commission has failed to design and execute a coordinated regional plan. Regional priorities have been neglected in favor of local benefits. No regional network is being constructed or planned for construction in the near future. Not one of the 20 corridors requiring highway improvements and new construction is scheduled for completion.

The sizable investments in the highway program are frequently justified as the only practical way to redistribute income to rural areas and provide social services, especially in health and education, for those districts having limited tax resources. In fact, the redistribution has been in favor of urban and suburban centers at the expense of the rural districts. Given that the provision of social services is tied to the highway program, these social services will be provided to those states having the tax resources required by a matching-funds strategy of investment. It is highly probable that some of the inequities to be decreased by the program will actually increase.

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