JOINT LEGISLATIVE AUDIT AND REVIEW COMMISSION

THE VIRGINIA GENERAL ASSEMBLY

HIGHWAY AND TRANSPORTATION PROGRAMS IN VIRGINIA: A SUMMARY REPORT

A report in a series dealing with highway and transportation issues in Virginia.

REPORT OF THE JOINT LEGISLATIVE AUDIT AND REVIEW COMMISSION

ON

HIGHWAYS AND TRANSPORTATION PROGRAMS IN VIRGINIA:

A SUMMARY REPORT

TO

THE GOVERNOR

AND

THE GENERAL ASSEMBLY OF VIRGINIA

SENATE DOCUMENT NO. 6

COMMONWEALTH OF VIRGINIA
Richmond, Virginia
1982

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COMMONWEALTH of VIRGINIA

Joint Legislative Audit and Review Commission

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November 30, 1981

The Honorable John N. Dalton, Governor
The Honorable Members of the General Assembly
State Capitol
Richmond, Virginia 23219

Ladies and Gentlemen:

We are pleased to enclose the summary report on highway and transportation programs in Virginia. The report was prepared by the Joint Legislative Audit and Review Commission with the cooperation of a study committee designated by Senate Joint Resolution 50 of the 1980 Session.

Sincerely,

Theodore V. Morrison, Jr.
SJR 50 Committee Chairman

Richard M. Bagley
JLARC Chairman

TVM:RMB/jmi

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I. HIGHWAY AND TRANSPORTATION PROGRAMS IN VIRGINIA

Introduction

Senate Joint Resolution No. 50 mandated that the Joint Legislative Audit and Review Commission (JLARC) review the programs and activities of the Department of Highways and Transportation (DHT). The resolution called for the study to focus on the administration of the department, highway and transit needs, revenues and methods of financing needs, and the fair apportionment of construction and maintenance costs among vehicles of different sizes and weights. The Commission was directed to make an interim report before the 1981 session of the General Assembly and a final report before the 1982 session.

This document presents a summary of the studies conducted under SJR 50 and highlights each principal finding and recommendation. Six other reports, one for each component of the study series, are available. These include—

1. Organization and Administration of the Department of Highways and Transportation—Interim Report.
2. Methodology for a Vehicle Cost Responsibility Study.
3. Vehicle Cost Responsibility in Virginia.
4. Highway Construction, Maintenance, and Transit Needs.
5. Financing Highway and Transportation Programs in Virginia.
6. Organization and Administration of the Department of Highways and Transportation—Final Report.

The Department of Highways and Transportation has broad responsibilities for the construction and maintenance of the 60,881 miles of roadway in Virginia's highway system. The department also has a variety of transit related duties. To fulfill these functions, the department has become one of the largest agencies of State government, with 11,818 authorized staff positions and a biennial appropriation of $1.9 billion in 1980-82.

Over the years the mission and the organization of the department have been shaped largely by external events. In 1963, the Virginia Highway Study Commission (commonly referred to as the Stone Commission) recommended increasing highway revenues and embarking on an ambitious construction program. The commission proposed modifying the department's organizational structure and streamlining highway planning, design, and construction functions. The number of employees devoted to construction activities rapidly increased.

As the highway system matured during the 1960s and early 1970s, transportation planning emerged as an important State and national concern. In 1970, as a result of federal mandates, an environmental quality division was created to make environmental impact assessments of highway projects. The following year, the transportation planning function was separated from the programming and scheduling of construction projects. Legislation was enacted in 1974 requiring the Highway and Transportation Commission to prepare a statewide transportation plan. The planning responsibility was subsequently transferred to the office of the Secretary of Transportation.

The funding environment for highway programs changed dramatically in the late 1970s for two reasons. First, inflation in costs began to outpace the rate of revenue growth. The high price of oil has both raised costs and reduced travel, thereby eroding gas tax revenues. Second, maintenance expenditures have been increased substantially beyond previous levels.

The most visible change in the Commonwealth's transportation structure was the department's 1974 name change—the Department of Highways and Transportation. Although the department's primary task continued to be highway construction and

maintenance, the change recognized the growing interrelationships among all forms of transportation. Since 1974, DHT has added operating divisions concerned with public transportation and railroads, and has provided staff to the Secretary of Transportation for the development of the statewide transportation plan.

Highway and Transportation Funding

During the 1960s and most of the 1970s, the department operated in a revenue-rich environment. Emphasis was placed on expanding the existing road system through the addition of parallel lanes to primary routes, constructing bypasses, developing urban thoroughfares, and establishing an arterial network. Substantial progress was made in completing Virginia's portion of the interstate system. During that time, the department was permitted to function outside the mainstream of State budgetary policies and procedures. That is, it was viewed as a special purpose organization totally supported by special, dedicated funds; as such, it was not subjected to the aggressive budgetary oversight applied to other State agencies.

However, two factors altered the funding environment for highway programs dramatically in the late 1970s. First, inflation in the cost of highway construction and maintenance began to outpace the rate of revenue growth. In the early 1970s, even with the decline in revenues following the 1974 Arab oil embargo, revenues consistently exceeded the amounts needed to maintain a 1970 level purchasing power (Figure 1). Between 1970 and mid-1977, DHT had sufficient revenues to support real growth in its programs. After 1977, however, highway fund revenues steadily lost ground. The two cent per gallon increase in the motor fuel tax enacted in 1980 did little more than offset the erosion in purchasing power experienced through inflation.

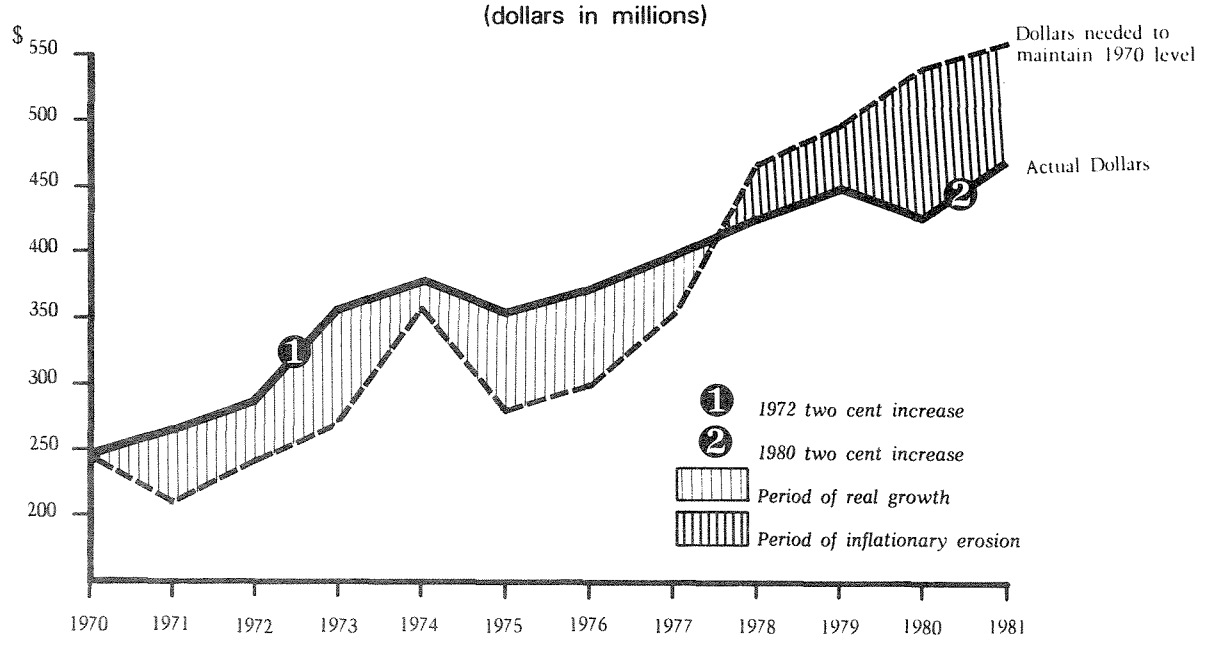
The second factor defining the current funding environment for DHT programs is the rapid increase in maintenance spending. Maintenance expenditures per lane-mile of highway have increased by 20 percent over the last five biennia (Table 1). The dollar amounts shown in the table are indexed to control for inflation and to exclude such items as bridge maintenance, weigh stations, ferries and extraordinary repair work, which are not

Figure 1

USER CHARGE COLLECTIONS AND INFLATION

FY 1970 - FY 1981

(dollars in millions)



Source: JLARC Analysis of Various DHT Inflation Indices and Annual Reports.

Table 1

MAINTENANCE EXPENDITURES PER LANE MILE

(Dollars in Millions, indexed to FY 1971 costs)

Biennium	Total Expenditures	Routine Maintenance	Maintenance Replacement
1970-72	$435	$264	$171
1972-74	403	223	180
1974-76	410	238	172
1976-78	472	225	247
1978-80	523	268	255
Percent Change	20%	2%	49%

Source: JLARC Analysis of DHT Data.

likely to be correlated with changes in the lane-miles of roadway.

The table highlights several important points. Total expenditures per lane-mile increased 20 percent even after inflationary effects are eliminated. Furthermore, virtually all of the real increase in spending occurred in the category labeled "maintenance replacement." Maintenance replacement is essentially the renovation of existing highway facilities with pavement overlays, replacement of signs, guardrails and other facilities, and major repair of drainage structures and bridges. Maintenance replacement spending increased by 49 percent for the decade even after inflationary effects are eliminated.

The increased level of maintenance spending is now part of the base DHT budget. The total maintenance budget increased from $48 million in 1970 to $186 million in 1980. It is projected to be $260 million in 1983. As a result, highway maintenance—once a relatively low cost program compared to construction—is projected by DHT to require all currently available highway maintenance and construction funds by 1985. Without new revenues, such projections signify an end to Virginia's highway construction program. The alternative to new revenue authorizations would be major cuts in maintenance spending. Such cuts would run the risk of accelerating deterioration of the highway network, which results from the aging of pavement and bridges, and increased traffic volume and weights.

Simply increasing one or more of the taxes supporting highway and transportation programs will not, by itself, provide an adequate basis for highway programs during the next decade. In order to effectively deal with the changes in the funding environment, other factors need to be considered.

1. DHT does not have the budgetary framework necessary to be fully accountable for the use of revenues consistent with legislative direction. Changes are needed in current budgeting procedures for construction, maintenance, and public transportation programs. Greater attention needs to be given to management controls in order to reduce costs and increase efficiency.

2. Highway and transportation funding policy needs to be evaluated on the basis of three criteria: adequacy of revenue; equity among user classes; and efficiency of administration. Although Virginia's current tax structure is fundamentally sound, the revenue sources are not sufficiently sensitive to inflation. Administrative charges which were designed to recover cost of services have not been updated adequately and now drain funds from programs. And, some inequity exists between revenue contributions and expenditures made on behalf of the two middle weight truck classes.

The remainder of this summary outlines findings and recommendations in these two areas and presents several options the General Assembly may wish to use in financing future highway and transportation programs. Chapter II presents an evaluation of planning, programming, budgeting, and management changes suggested for DHT. Chapter III reviews highway and transportation needs, and assesses the ability of current financing mechanisms to meet those needs. Finally, Chapter IV presents four financing alternatives for legislative consideration for the 1982-84 and 1984-86 biennia.

II. PROGRAM DEVELOPMENT, BUDGETING, AND MANAGEMENT

The planning, programming, and budget development practices of DHT do not yet provide a sufficient framework for highway and transportation programs over the next decade. Greater attention to policy formulation, construction programming, maintenance budgeting, public transportation needs assessment, and management controls is necessary.

Policy Formulation

Formulating policy is primarily the responsibility of the Highway and Transportation Commission and the Secretary of Transportation. The Highway and Transportation Commission is the statutory policy-making body for DHT. The Secretary provides a source of program direction and budget oversight; he is charged by statute to prepare statewide multimodal transportation plans.

Commission Role. The commission is active in its oversight of highway construction but does not have a similar level of involvement with the maintenance or public transportation programs. For example, although statute gives the commission the responsibility for recommending to the legislature a "reasonable and necessary" level of highway maintenance, the commission has not worked with DHT staff to define a policy for what constitutes a "reasonable and necessary" program. And each of the commission members interviewed during the course of this study either did not fully understand the maintenance budgeting process or felt it was effectively beyond their control.

Similarly, relatively little attention is given to public transportation policies and programs at the commission level. For example, although the commission has a number of committees which deal with such topics as ferries and highway use permits, there is no committee for public transportation—a major function of the department.

Recommendation (1). The Highway and Transportation Commission should give greater attention to the biennial maintenance program. The program should recommend for legislative consideration the amount required to preserve the highway investment, and the amounts necessary to achieve other desirable maintenance enhancements. (See Recommendation 5).

Recommendation (2). The commission should establish a standing committee on public transportation. One member of the commission, possibly the at-large, urban member, should be designated by statute to represent public transportation concerns and chair the committee.

Secretary's Role. The Secretary of Transportation has two major roles with regard to DHT policy formulation. First, as a cabinet officer, the Secretary is formally charged with directing the development of the DHT budget. Important progress has been made in expanding the Secretary's budget review role. However, evaluation of DHT program planning and budget procedures identified problems in conformance with State law and in providing assurances of legislative accountability. There is a clear need for expanded involvement of the Secretary in budget oversight.

The second role of the Secretary is in the preparation of a statewide transportation plan. The plan was first mandated by the General Assembly in 1974 as a responsibility of the commission. The responsibility was shifted to the Secretary's office in 1978. Although a status report on the plan was prepared for the 1981 legislative session, the completion date, format, and content of the plan still remain uncertain.

Recommendation (3). The Secretary of Transportation should expedite the exposure of the statewide transportation plan. The plan should contain specific discussion of the major transportation issues facing Virginia in the 1980s and present recommendations for meeting those needs. Members of the Highway and Transportation Commission, local officials, and regional and local planning agencies should have ample opportunity to contribute to the

plan's development. The General Assembly may wish to set a deadline by resolution or statute for completion of the statewide transportation plan.

Construction Programming

DHT has spent more than $4.5 billon for highway construction in the last 15 years. Nevertheless, the most recent (1980) assessment of remaining "present day" construction needs called for spending $6.7 billion—an amount which the department acknowledged was unfundable under any reasonable assumptions of inflation. While it was clear from the 1980 needs assessment that setting priorities among construction requests was essential, DHT is only now beginning to develop a framework for establishing those priorities. The highway planning process of the department has little value to the General Assembly without a means of translating open-ended needs assessments into alternative programs for funding consideration.

Recommendation (4). DHT should improve its construction needs assessment process by taking the following actions:

a. All future needs assessments done by the department should reflect the immediacy of the funding requirement in terms of when each project can realistically advance to construction. Projects which are not anticipated to require construction funds within the six-year planning cycle used for the Commonwealth's budget should be clearly identified and distinguished from projects which can be moved to the construction phase within six years.

b. An analytic framework should be developed for establishing priorities among highway construction needs and presenting several levels of spending as alternatives in the biennial budget. The analytic framework should include but not be limited to the following factors: (1) federal aid availability; (2) traffic volume and congestion; (3) safety; (4) structural deterioration and functional limitation of the existing facility; and (5) local government endorsement.

c. DHT should expedite the completion of a highway improvement program which identifies high-priority spending objectives for construction during the subsequent four to six-year period. The program should be completed and made available to the General Assembly for review in the 1982 session. The program should provide for an annual updating and adjusting to report on progress in fulfilling program objectives and to accommodate General Assembly action or other changes in existing conditions.

d. The Highway and Transportation Commission should formally review and approve the highway improvement program and annual updates as well as keep apprised of progress made by the department in meeting program objectives.

Maintenance Budgeting

The General Assembly has endorsed placing a priority on maintenance spending to protect the existing highway investment and provide for acceptable levels of safety, comfort and convenience. However, the methods currently used by DHT for assessing maintenance needs do not guarantee that the intent of the legislative priority is met.

For example, although most routine maintenance work is based on standards which were systematically developed in 1964, field staff commonly deviate from the budgets developed through use of the standards. This lack of compliance with budgets is a particular concern when limited resources are forcing service reductions. A consultant employed by DHT during 1980 observed that management decisions regarding cutbacks and service reductions are made at the individual field office level rather than as part of a "deliberate and consistent adjustment to maintenance operations." As a result, the value and legitimacy of the maintenance standards as a budgeting or management control tool are questionable.

DHT also has relied almost exclusively on individual judgements and past spending levels in establishing maintenance replacement budgets. The department is currently developing a pavement management system for the interstate which will provide more systematic and reliable assessments of pavement maintenance requirements. DHT also has the capability to perform systematic ratings of bridge conditions which could provide important information on bridge maintenance needs, but the bridge ratings are currently limited in their usefulness.

Recommendation (5). DHT should develop a biennial maintenance program which identifies the "minimum funding level necessary to protect the highway investment and provide for

reasonable levels of safety and comfort to the travelling public." The plan should also identify "other spending levels above the minimum program which are recommended to provide for desirable levels of comfort, convenience and other maintenance enhancements."

The intent of this recommendation is to provide the General Assembly with at least two alternatives for funding highway maintenance, and the implications of each spending level.

A draft version of the program should be developed by January 1983 and a status report provided to the General Assembly. The approved program should then be incorporated into the 1984-86 biennial budget.

The 1982-84 Appropriations Act should mandate that a complete assessment of highway conditions be completed and a suitable maintenance program developed by the start of the 1984-86 biennial budget preparation cycle.

Recommendation (6). DHT should re-evaluate its policies regarding the workload standards used in budgeting for routine maintenance. Either closer adherence to the standards by field managers should be required, or the value of maintaining and updating the standards should be reconsidered.

Recommendation (7). DHT should place a high priority on full implementation of a pavement management system for Virginia. The system should be able to provide data on pavement conditions on all highway systems using appropriate sampling procedures. The preliminary information should be incorporated in the 1983 status report on the maintenance program.

Recommendation (8). Greater attention should be given to the bridge condition rating system. The Bridge Division should take the lead in developing a training program for bridge engineers to ensure that ratings are consistent. Data from the rating system should be used by maintenance staff to set statewide priorities for bridge maintenance and replacement.

Public Transportation Needs

The public transportation program in Virginia includes 15 urban area bus systems, metrorail, and ride-sharing programs.

Bus Service. All public bus systems in Virginia operate at losses which range from ten cents per passenger-trip for the Petersburg system to over one dollar per passenger-trip for some of the smaller systems (Table 2). This

Table 2
OPERATING LOSS PER PASSENGER-TRIP
VIRGINIA PUBLIC BUS SYSTEMS
FY 1980

	Passenger Trips (in thousands)	Operating Loss (in thousands)	Loss Per Trip
Harrisonburg	39	$ 54	$1.40
James City	71	84	1.19
JAUNT	94	144	1.53
Winchester	142	123	.87
Staunton	150	149	1.00
Bristol	159	97	.61
Danville	446	147	.33
Charlottesville	641	373	.58
Petersburg	1,030	105	.10
Lynchburg	1,900	911	.48
Roanoke	2,600	1,285	.49
Peninsula	4,800	2,294	.48
Tidewater	14,500	9,937	.69
Richmond	24,100	4,261	.18
WAMTA	33,900	30,863	.91

Source: Prepared by JLARC from various DHT and bus system reports.

operating deficit is made up by using federal and local funds. With the exception of a few demonstration grants, State funds are not available to offset operating deficits.

To fund operating losses, localities provided $27.6 million to bus systems for operating subsidies in FY 1980, while the federal government provided $15.4 million. Administration proposals now before Congress will eliminate all federal operating assistance by 1985 and support for some small systems will be withdrawn as early as 1982. Virginia's bus systems will have to dramatically raise fares to maintain service levels. Even then, the data suggest that a number of systems may be unable to raise fares enough to avoid broad service reductions. Some of the small systems are unlikely to survive.

In order to address the problems created by proposed federal cutbacks, Virginia will need a policy for action. Statute clearly gives the responsibility for evaluating transit needs and operating efficiency to the public transportation division of DHT. Although the division has conducted some studies, the usefulness of information is limited due to the lack of uniform reporting. For example, it took JLARC over three months to develop comparable operating statistics for Virginia bus systems. In addition, there is little information on the operating efficiency of individual systems or the potential for increasing fares without causing an unacceptable loss of ridership.

Metrorail. Funding for the metrorail system in Northern Virginia is a policy consideration of the Commonwealth. Metrorail receives no operating assistance from either the State or federal governments but does receive State assistance for capital acquisition and retirement of bonds used to fund metrorail construction. In the current biennium, State assistance for metrorail construction is about $17 million. This amount is projected to decrease to $8.2 million for the 1982-84 biennium.

The present agreement between Virginia, Maryland and the District of Columbia calls for Northern Virginia localities to pay $117.3 million over the three-year period 1983-1985. The regional gasoline tax enacted for Northern Virginia in 1980 will produce an estimated $10.8 million annually based on 1982 projections. The remainder of the necessary funds will come from local bond issues.

A 1979 study for the Secretary of Transportation found Northern Virginia localities were likely to experience steadily increasing property tax burdens as a result of metrorail funding requirements. Officials of the Northern Virginia Transportation Commission have expressed concern about the proposed decrease in State funding assistance in light of the secretary's report. Since the completion of metrorail is not projected until beyond 1990, it is clear that the question of State funding support will continue to be an issue for the next decade.

Ride-sharing. A number of groups in Virginia receive State or federal funds to promote ridesharing, vanpooling and carpooling to relieve highway congestion and increase fuel conservation. During the 1980-82 biennium ridesharing programs received State funds through demonstration grants which were limited to 12 months' duration. This limitation inhibited the development of stable programs. According to DHT this problem will be addressed by more general language which has been proposed for the 1982-84 biennial budget.

Recommendation (9). The public transportation engineer should take the lead in developing uniform financial and operating report formats which provide comparable information on all transit systems. As a part of a technical assistance program to local transit systems, the public transportation engineer should aggressively pursue identifying ways of reducing operating costs and evaluating transit services.

Finally, the public transportation engineer should prepare a biennial report on public transportation in Virginia which includes the results of efficiency reviews carried out under statute as well as a detailed assessment of public transportation needs of the Commonwealth. This report should have wide distribution and be provided to the appropriate committees of the General Assembly.

Recommendation (10). The General Assembly may wish to create a special joint committee to review State policies regarding public transportation. The committee should be directed to review the financial needs of public transit, ridesharing programs, and other mass transportation activities in light of changing federal aid policies. Among the alternatives that should be considered are (1) provision of direct State support for operating expenses of public transportation, (2) authorizing local

governments to impose special taxes, or (3) other alternatives which would provide a stable and reliable source of funding for public transportation. The committee should identify policy options and make recommendations to the 1983 General Assembly.

Compliance with the Appropriations Act

DHT has overspent highway maintenance funds beyond levels authorized in the 1978 - 1980 Appropriations Act. Item 622.1 of the Act specifically limits overspending of highway maintenance to no more than ten percent of the appropriated amount plus an additional amount necessary to provide a cost of living increase to DHT employees. Total appropriations for the biennium were $306,996,000 while expenditures totalled $414,675,000, an overexpenditure of $107 million.

The provisions of Item 622.1 would have allowed a maximum of $48 million overspending. The remaining $59 million appears to have been spent beyond the authorized limits. DHT states that a verbal authorization for the overspending was given by an official of the Department of Planning and Budget (DPB). However, DPB does not have the authority to override the Appropriations Act. Therefore, the overspending was without legislative basis and contrary to the language in the Act which limited maintenance spending to a specific amount.

The overspending was not detected by the State agencies responsible for budget administration or accounting because of flaws in budget implementation and in accounting. Both construction and maintenance appropriation items have been combined into a single account which makes it impossible to monitor either construction or maintenance program spending individually. The Department of Accounts intends to correct this weakness for the 1982-84 biennium.

Recommendation (11). The Department of Planning and Budget and the Department of Accounts should take immediate steps to establish separate control accounts for each appropriation item of highway construction and maintenance in the "highway work in progress" fund. Appropriation and allotment increases made to the work in progress fund should identify the amount of increase for maintenance and construction separately.

Compliance with Statutory Allocations

The General Assembly has adopted statutory language to guide the allocation of construction funds among highway systems. Although the formulas and provisions have been amended from time to time, the allocation process has remained the means for stating legislative intent with regard to construction funding. The allocation process has also served the important function of communicating construction plans and priorities to legislators, local officials and the general public. The importance of the allocation process as a means of public communication was noted by the R.J. Hansen Co., which the Department of Highways and Transportation hired as consultants. Hansen reported that allocations are "a communication of priority to the public and, of course, result in expectations by the public." This view was confirmed by local officials interviewed by JLARC staff who indicated that they considered an allocation a commitment to construct a project.

The JLARC report on DHT organization and administration showed that actual spending patterns for highway construction varied greatly from allocations. Between 1967 and 1981, $206 million more was allocated to the urban system than expended. The primary and secondary systems show similar allocation balances of $59 million and $39 million respectively. In contrast, $14 million more has been spent on the interstate system than has been allocated.

A similar situation exists in the allocation of secondary construction funds to counties. In 1977, the General Assembly mandated in Section 33.1-23.4, *Code of Virginia* a formula for allocating secondary system funds. An analysis of allocations made for the period 1977-1980 found that in only 24 of 94 counties did allocations and expenditures come within ten percent of each other over the three year period. Differences ranged from one county which spent 235 percent over allocations to another county which spent only 39 percent of allocations.

Significant variations between allocations and expenditures may not satisfy the intent of the General Assembly with regard to the distribution of construction funds. However, although there is a common perception that expenditures should equal allocations (at least

over a period of several years), the statutory relationship between the two has not been established by the legislature.

Recommendation (12). The General Assembly may wish to clarify its intent regarding the extent to which expenditures are to be consistent with the allocation of construction funds under Section 33.1-23.1 and Section 33.1--23.4, *Code of Virginia*. Definition of the term "allocation" to mean intent to expend allocated funds within a specified time period (consistent for example with DHT's four-to-six year construction program) would provide the basis for greater legislative direction and establish a clearer basis for accountability in the distribution of construction funds.

Recommendation (13). For the purposes of addressing the current imbalance between allocations and expenditures among highway systems, the General Assembly may wish to:

a. require DHT to prepare a plan for General Assembly consideration that will eliminate the existing imbalances within the statutory provisions.

b. suspend the application of Section 33.1--23.1, *Code of Virginia* for a time period sufficient to allow DHT to address the current imbalances.

c. require specific consistency between expenditures and allocations made in the future but permit greater flexibility in the extent to which past allocations and expenditures are expected to coincide.

Capital Outlay Procedures

DHT has built and now maintains approximately 300 facilities across the State. In FY 1981, the department spent $6.4 million to build and maintain these facilities. In the past, DHT has constructed virtually all its facilities without complying with the statutory provisions of the capital outlay process. A review of statutes does not appear to give DHT any special authority in this area other than in land acquisitions for highways. In fact, in 1980, the General Assembly stated in Section 2.1-507 of the *Code of Virginia* that while land purchased for highway construction was exempt from review,

> . . . acquisitions of real property for office space, district offices, residencies, area headquarters, and correctional facilities shall be subject to such review and approval (by the Division of Engineering and Buildings).

Although DHT has begun to comply with these provisions, more changes are needed.

Recommendation (14). DHT should improve control and coordination over capital outlays by consolidating the capital budget function with the office responsible for preparation of the operating budget. The capital budget responsibility should be assigned to the DHT budget division with the existing capital outlay committee assigned an advisory role or abolished.

Recommendation (15). The department should comply with the capital outlay policies and procedures specified in the Appropriations Act. All construction and renovation projects affecting office space, district offices, residencies, area headquarters and correctional facilities should come under the State's capital outlay policies and procedures. Acquisition of land for such purposes should be reviewed by the Division of Engineering and Buildings of the Department of General Services.

ORGANIZATIONAL STRUCTURE AND FUNCTION

The Department of Highways and Transportation is a large bureaucracy with 11,818 authorized positions, 85 separate organizational units, and eight levels of management between the commissioner and the crews which perform highway maintenance.

Organizational Structure

The current organizational structure is fundamentally sound and reflects, in large measure, the sweeping revisions recommended by the Stone Commission in 1962. In the Stone Commission report, organization changes were proposed to clearly differentiate the authority and duties of the highway commission, commissioner, deputy commissioner and district staff. The thrust of these recommendations was to delegate authority to the lowest practical echelon of the organization while maintaining necessary management controls.

Since the Stone Commission study, the central office has undergone some organizational changes. The present organization is illustrated in Figure 2. Several problems are

apparent with the central office structure:

- An increasing number of important organizational units are reporting to the highway commissioner;
- Planning and programming activities need to be more closely coordinated with the budgeting process;
- The public transportation division is not functioning as the General Assembly directed; and
- Matters related to internal auditing are not reported directly to the highway commissioner and Highway and Transportation Commission.

A proposed reorganization of the central office is shown in Figure 3, with changes indicated by shading. The thrust of the reorganization is to better distribute workload among DHT top managers, to strengthen oversight and coordination of field operations, to improve planning and budgeting, and to reaffirm several organizational principles first articulated by the Stone Commission.

Deputy Commissioner/Chief Engineer. Under the present organization, the deputy commissioner/chief engineer oversees the planning, engineering, and field operations functions, while the commissioner directs the administrative and financial units of the organization. The involvement of the commissioner in day-to-day management was criticized by the Stone Commission in 1962 because of the resulting "inadequate opportunity to devote effort to the executive responsibilities of his position." The same concern is even greater today in light of strains caused by limited resources and the more complex policy considerations required of present day transportation development.

Separating the current deputy commissioner/chief engineer position into co-equal managers would have two benefits. First, it could relieve the commissioner of the day-to-day responsibilities incumbent in the current structure. Second, by grouping the planning, programming, and fiscal control functions under the deputy commissioner, increased coordination over policy and budget development functions would be achieved.

Recommendation (16). The General Assembly may wish to amend statute to establish a deputy commissioner position distinct from the chief engineer position. The deputy commissioner should oversee policy research, planning, programming, budgeting and administrative functions. The chief engineer should oversee operations and engineering, including district and residency operations.

Public Transportation. In 1978, the General Assembly directed that the public transportation division be created within DHT and report to the commissioner. The division was given broad responsibilities to perform needs assessments, financial feasibility evaluations, and operating efficiency studies of individual transit systems. The division also was charged to administer State and federal grant programs. The high-level reporting relationship prescribed in statute was intended to prevent the special needs of public transportation from being overshadowed by the traditional highway responsibilities of the department.

The public transportation division does not presently play the role intended by the General Assembly. The division does not conduct the kinds of efficiency studies or needs assessments envisioned. The type of informational material required to provide a basis for policy formulation is not available today. On a day-to-day basis the division is directed to report to the director of planning, rather than the commissioner as specified in statute. The lack of clear policy focus is of particular concern because operating losses plague all of Virginia's transit systems and recent federal policy changes would eliminate the operating subsidies upon which many transit systems depend.

One important step to increasing the visibility of public transportation within DHT would be the creation of a standing committee of the Highway and Transportation Commission as recommended earlier. However, the realities of the DHT organizational structure suggest that the public transportation function should be enhanced if the intent of the General Assembly is to be met.

Recommendation (17). The General Assembly should create a directorate for public transportation. This action, in conjunction with establishing a standing committee of the commission and expanding the role of the public transportation engineer consistent with the statutory charge, is intended to give

Figure 2

DEPARTMENT OF HIGHWAYS AND TRANSPORTATION ORGANIZATION

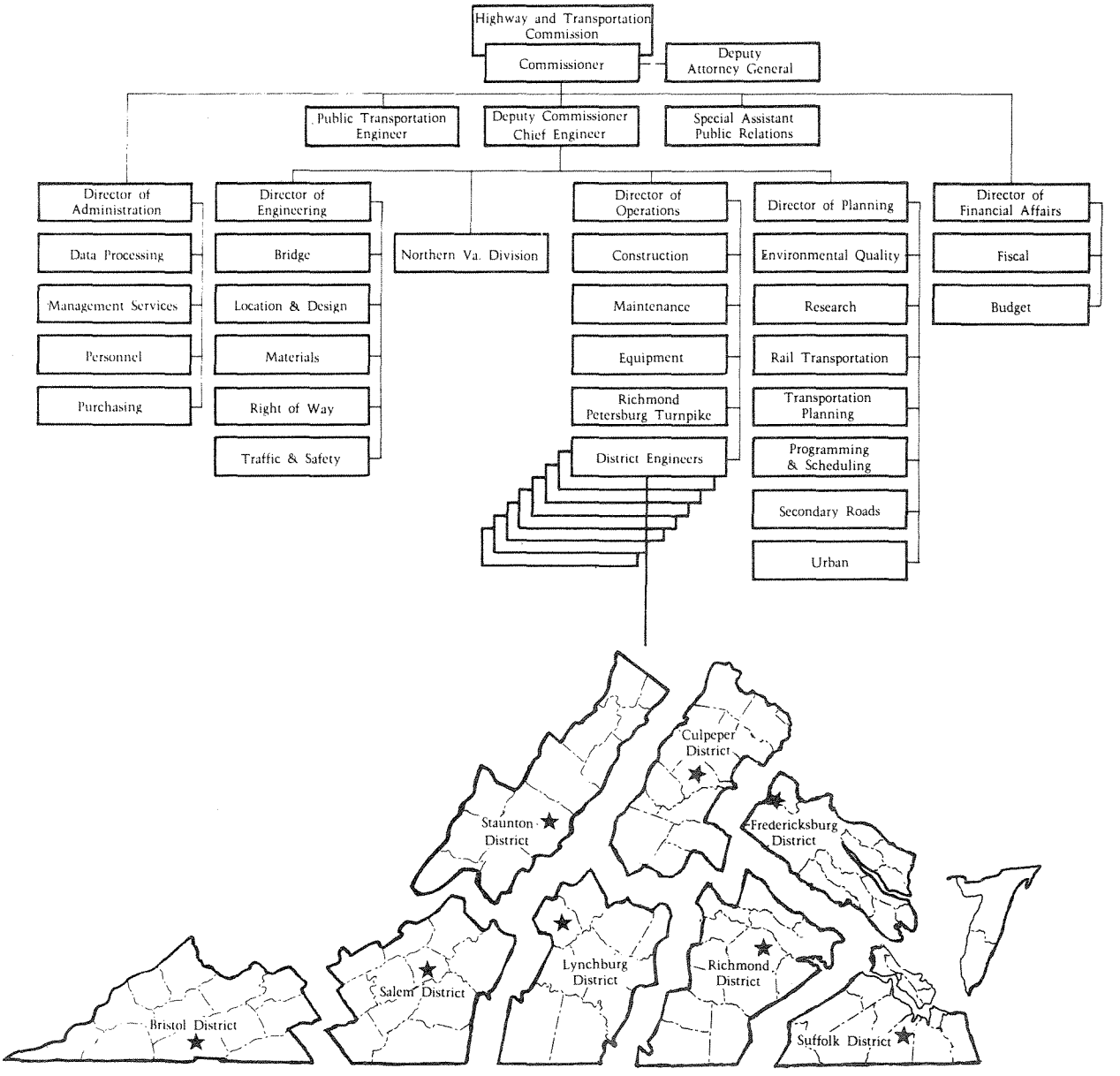
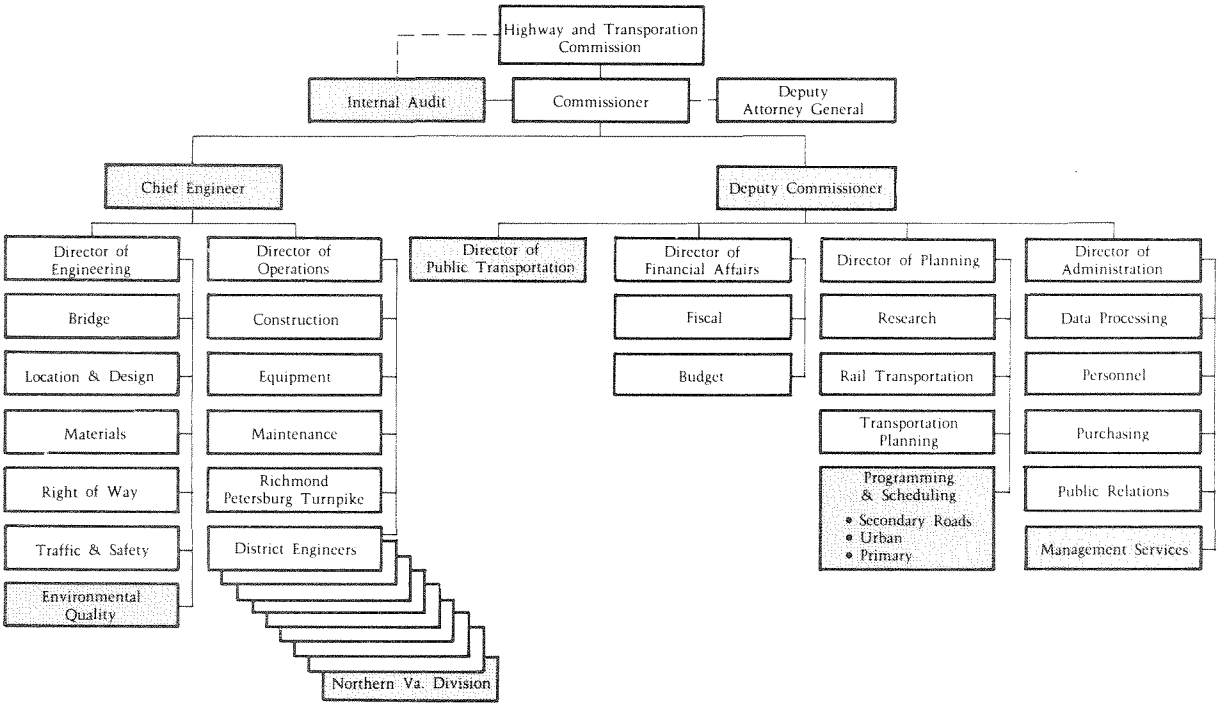


Figure 3
PROPOSED REORGANIZATION OF DHT CENTRAL OFFICE



Virginia a single unified focus for public transportation policy development at an appropriate organizational level within DHT.

Internal Audit. The internal audit function is currently housed in the management services division which reports to the director of administration. This organizational placement of internal audit is not consistent with State policy which calls for the function to report directly to top management, for example, to the commissioner or deputy commissioner. Nor are all internal audit reports routinely made available to the highway and transportation commission.

Recommendation (18). DHT should establish an internal audit unit which reports to the highway commissioner. All internal audits, including those dealing with financial and administrative matters, should be transmitted to the Highway and Transportation Commission Audit Committee. The Commission should actively participate in selecting topics and endorsing recommendations. DHT should request the State internal auditor's office to assist in developing operating guidelines and reviewing personnel qualifications.

Separating the internal audit function from the management services division would still leave a core of important functions with that unit. Three functions are particularly important: value engineering; methods improvement; and applied engineering research. Value engineering refers to the practice of conducting an independent review of preliminary designs to identify cost reductions. In one project, for example, a DHT value engineering team identified options for eliminating curbs and gutters and making minor geometric changes which reduced a $4.5 million project by $621,000 (14

percent). Development of improved methods of operation and ongoing applied engineering research are also essential to reducing the cost of DHT programs.

Recommendation (19). The management services division should develop a systematic means of conducting value engineering, methods improvement, and applied engineering research as a means of reducing costs. Involvement of staff of the Highway and Transportation Research Council, use of task forces, committees and other problem-solving groups should be continued and expanded.

Other Proposed Changes. Two other organizational changes are proposed to streamline the programming and engineering directorates. Currently there are separate construction programming divisions for each of the administrative systems: primary, urban and secondary. DHT contends that this arrangement gives important visibility to the unique problems of each system. However, their functions are similar and there is some evidence that combining all programming functions into a single division would reduce staffing requirements through cross-training, which would allow staff to shift as necessary between the workload requirements of the individual systems.

A second change would move the environmental division from the planning directorate to the engineering directorate. This would better recognize the role of environmental engineering staff in the preconstruction phase of project design.

Recommendation (20). DHT should combine all construction programming into a single division for program management. Individual section heads could be identified for the primary, urban and secondary systems but the remainder of the division staff should be cross-trained to work on any of the three systems.

Recommendation (21). The environmental division should be assigned to the engineering directorate.

Geographic Structure. DHT is organized into eight construction districts, the boundaries of which have not been realigned since they were created in 1923. Changes in travel patterns, population and economic concentrations have resulted in imbalances in district workloads. The Northern Virginia area has been cited as a particular problem in four separate studies conducted over the last decade. Each study has concluded that a ninth district should be created. However, creating a ninth district would cost as much as $860,000 in annual operating costs and lead to a substantial investment in capital costs. A ninth district would also require statutory changes and the appointment of a twelfth commissioner.

An alternative to creating a ninth district is to realign the existing eight district boundaries to better distribute workload. All eight construction district boundaries should be reviewed. One option for Northern Virginia which would transfer several counties in the existing Culpeper district to the Fredericksburg or Staunton districts is shown in Figure 4.

Recommendation (22). The Highway and Transportation Commission should review boundaries of the eight construction districts and make adjustments where necessary. Adjustments should be made based on considerations of current workload (such as population served, number of vehicles, lane-mileage) as well as consistency with planning districts and appropriate physical, jurisdictional and economic boundaries.

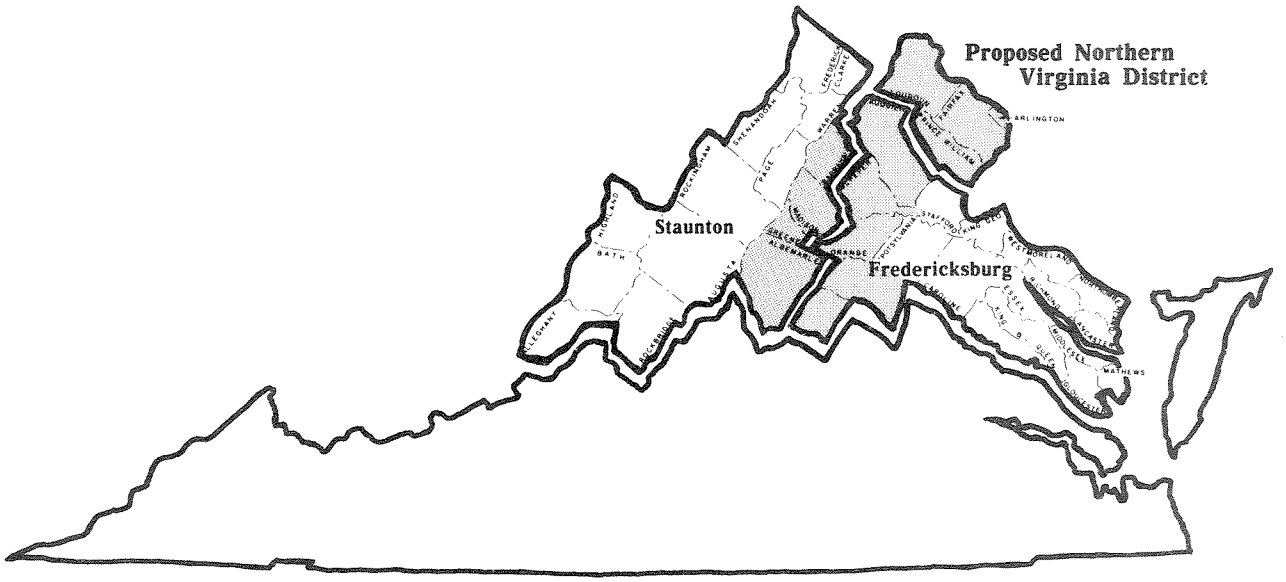
Area Headquarters. The lowest levels of DHT field organization are the 241 area headquarters. These are generally staffed with a supervisor, timekeeper, and road crew. Some of the larger area headquarters also house supply rooms.

Area headquarters staff oversee maintenance work in a relatively small geographic area. At least one-half of all area headquarters are within 10 miles of another headquarters. DHT contends that having large numbers of area headquarters provides for increased responsiveness to maintenance problems and greater familiarity with local conditions on the part of maintenance staff. However, North Carolina maintains a highway system of similar size with the county as the lowest level of field organization. Virginia's approach adds over 100 positions to the maintenance staff.

Recommendation (23). DHT should consider increasing the mileage served by an area headquarters and corresponding reductions in

Figure 4

ALTERNATIVE DISTRICT BOUNDARIES FOR NORTHERN VIRGINIA



Counties that are included in the current Culpeper District are shaded.

the number of area headquarters and related timekeeper and area supervisor positions. The elimination of each area headquarters will reduce overhead costs by about $50,000 and should prove to have little, if any, negative effect on the responsiveness of maintenance crews.

Organizational Roles and Relationships

A series of past studies has identified problems with uncertainty about the roles and responsibilities of the various organizational units of DHT. Specifically, there remains ambiguity about the following:

- The respective roles of the divisions in the central office to the field units;
- The role of preconstruction staff in the central office and the districts;
- The responsibility of the resident engineer; and
- The role of the rail division.

Field Control. DHT has decentralized much of the operational authority to the district and residency staff. However, central office control over the decentralized field structure is not always consistent or clear in its implications. For example, central office staff promulgate a wide variety of operating standards, guidelines and policies on activities ranging from preventive maintenance of equipment to spending targets for individual work activities. The implementation of central office directives varies from one field office to another. In general, it appears that the weight given to central office standards, policies and guidelines generally depends on the personality and orientation of the field supervisor. This can lead to a lack of accountability for performance and an inability of the central office to ensure compliance with management policies.

Preconstruction Staff. A special problem with organizational communication involves the preconstruction staff (survey, design, right-of-way, traffic and safety) in the district offices. Each district is staffed to perform most of the preconstruction work in its geographic area. This decentralization reduces travel time

and increases efficiency. However, district staff expressed the concern that, on the one hand, these individuals report to central office technical staff for review and approval of their work, and on the other hand, they are accountable to the district engineer for administrative supervision and direction. This dual reporting has led to inconsistencies in procedure and, in some cases, the adoption of ad hoc arrangements based on the preference and personal style of individuals.

Resident Engineer. Perhaps the key focal point for organizational communications is the resident engineer. Resident engineers have great latitude in working with local officials and managing maintenance and construction programs in their geographic areas. However, none of the 18 resident engineers interviewed by JLARC staff believed that they had received a full description of their responsibilities. The job description for resident engineer is imprecise and does little to clarify their role. Most of the resident engineers expressed reservations about the extent of their authority or acknowledged that they simply pursued an independent course of action until constrained by district or central office staff. In this way, resident engineers tended to develop their jobs to "custom fit" their individual situations.

Flexibility and encouragement of individual initiative is important to a decentralized organization. But care needs to be taken that the absence of enforceable guidelines and policies, or the lack of sufficient definition of roles and responsibilities, does not create frustration, communication breakdowns, loss of management control, or loss of organizational efficiency.

Recommendation (24). DHT should re-examine its approach to defining the roles and responsibilities of various organizational units. Procedures need to be improved for resolving differences between central office and district preconstruction staff, particularly in the area of design standards for minimum and no-plan projects. Resident engineers in particular, and all field managers in general, should have well defined job descriptions and training in their job scope and authority.

Recommendation (25). Central office policies, standards, and guidelines should be developed and promulgated with clear understanding as to whether they are advisory or mandatory. In general, those standards which are intended to improve performance, enhance efficiency, or create cost savings should be mandatory with specified procedures for granting exceptions.

Recommendation (26). The use of staff meetings to disseminate information should be improved by timing them to occur prior to public announcement of major department actions. District staff meetings should provide a primary channel for communicating between central office and residencies. District engineers should attend the monthly meetings of the Highway and Transportation Commission. In addition, department-wide leadership meetings should be held at least semi-annually.

Recommendation (27). Representation of resident engineers and field staff from regions outside the Richmond area on committees should be increased.

Rail Division. The rail division was established administratively within DHT in 1979. The major function of the division has been to prepare a State rail plan which is necessary for receipt of federal funds. Under an agreement with the Secretary of Transportation, the division reports to the secretary on policy matters and the director of planning for administrative direction and guidance. A recent review of the division by DHT's management services division was critical of the unclear direction and lack of defined purpose beyond compliance with federal regulations. The DHT report noted a number of functions the division could assume within existing resources.

Recommendation (28). DHT should work with the Secretary of Transportation to clarify the reporting relationship between the rail division and the secretary. Incorporation of additional functions should be considered to increase the value of the division.

Staffing

DHT is steadily reducing its staff through attrition and lay-offs. In August 1981 employment stood at 10,873. By FY 1984, the department plans to employ 10,177 persons, or a reduction of another 694 staff from the current level. Despite the large reduction in staff, a full determination of future staffing

needs is hindered by a lack of manpower planning. Training and staff development can also be upgraded to make better use of existing personnel.

Manpower Planning. Identifying surplus positions requires some means of establishing workload standards for each position classification. DHT recognized this need as early as 1970 in its own self-study, and two divisions and several field units have tried to develop workload standards. Only recently, however, has a committee been established to develop guidelines for identifying surplus staff—a step that coincided with the first layoffs in the department's history. (DHT has had a layoff policy since 1976 but did not use layoffs as a means of reducing surplus positions until May 1981.)

A comparison with North Carolina's highway maintenance program revealed that that state employs about 555 full-time equivalent staff on a seasonal basis, primarily for peak period summer work. Virginia used only 85 FTE temporary employees during the same time period.

Recommendation (29). The process of developing guidelines for identifying surplus positions should be expedited. Each division should identify potentially surplus positions and their impact on workload. The personnel division should coordinate this effort. A series of options for further staff reductions should be developed for each position.

Recommendation (30). Because it is important to retain qualified personnel, the department should consider alternatives to full-time employment for surplus staff. Placing surplus staff on a short work week or using temporary layoffs should be considered.

The use of part-time seasonal employees should be explored as a means of keeping maintenance programs operating while reducing the number of full-time staff.

Training. Training focused on broadening employee skills can reduce manpower needs by increasing the flexibility to use staff in several jobs. In addition, significant gaps in job preparation training were noted during this review. For example, stock clerks were often unaware of stockroom procedures because they had received little or no preparation for their jobs.

Recommendation (31). The training section and the district trainers should survey the organization to determine priority areas where skills improvements are needed. An appropriate skills training program should then be developed.

Management Controls

This review identified cost savings estimated at $29 million including $13 million in one-time savings and $16 million in biennial savings through increased productivity and lowered costs. Greater attention to management controls can identify additional savings.

Equipment Purchase. The interim report identified $9.5 million in requested purchases of major equipment items which were not justified based on a review of DHT's own utilization standards. For example, field staff requested the purchase of four angledozers at a cost of $558,400 when one district operated its three existing machines at just 29 percent of the utilization standard and a second district had nine units operating at an average of 44 percent of standard. Transfer or increased use of underutilized equipment was projected to reduce FY 1981 purchases by as many as 592 items of major equipment.

DHT succeeded in reducing equipment purchases by $8 million as a result of increased attention to utilization rates and improved controls.

Equipment Maintenance. DHT's equipment fleet appears to be generally well maintained. Two additional improvements could reduce maintenance costs. First, about one-half of the residencies have a policy of weekly shutdowns for preventive maintenance—usually Friday afternoon. The remaining residencies have monthly shutdowns. An analysis of equipment maintenance costs and breakdowns found that monthly shutdowns were just as effective but substantially less costly than weekly schedules. If all residencies performed monthly (instead of weekly) preventive maintenance shutdowns, about $820,000 annually would be available for other operating costs.

DHT also needs a more systematic means of tracking the maintenance history of major items of equipment. This information becomes particularly important in the latter stages of the equipment operating life when the decision on whether to conduct a major repair or

replacement depends in large part on the expected future performance of the equipment item.

Recommendation (32). DHT should establish monthly preventive maintenance programs as department policy.

Recommendation (33). DHT should improve on the existing equipment information system by developing lifetime cost profiles for all major equipment classes. These profiles should be used as a budget and management guide. DHT should also consider a separate budget activity code for equipment maintenance.

Inventory Control. DHT appears to be overstocked by as much as $5 million in supplies and materials. Improved use of existing computerized records can assist the department in establishing desired stock levels and reorder points to maintain an adequate inventory without costly overstocking.

DHT does not audit stockrooms on an adequate basis. Figure 5 shows that some districts were not audited for several years, and both the central warehouse and Richmond district were audited only twice in eight years. Audits were also found to be hampered by stock clerks who adjusted shortages by falsely recording missing parts and supplies as issued to a vehicle or work activity.

Recommendation (34a). DHT should establish desirable inventory levels for all classes of general supplies. These desired levels should be incorporated in the automated inventory information system and used as a guide to purchasing agents and field stock clerks in determining when to requisition and purchase additional stock. DHT should eliminate current overstocking by delaying additional purchasing until appropriate levels are reached.

Recommendation (34b). DHT should review its policies governing local purchases. Policies on dollar limits and competitive pricing should either be enforced or amended.

Figure 5
DISTRICT AUDIT HISTORY

Location	1973	1974	1975	1976	1977	1978	1979	1980
Central Warehouse			●			●		
Bristol	●	●	●	●	●		●	
Salem	●	●			●		●	
Lynchburg	●	●		●				●
Richmond	●	●						
Suffolk	●	●			●	●		●
Fredericksburg	●		●			●		
Culpeper	●	●			●		●	
Staunton	●	●		●				●
Toll Facilities	●	●			●	●		

Recommendation (34c). Purchasing agents should review local purchase invoices on a sample basis to (1) determine compliance with DHT policies, and (2) determine whether particular items are purchased frequently enough to justify central purchasing. The sample should be statistically reliable but need not involve an extensive commitment of time on the part of central office staff.

Recommendation (34d). The purchasing division should conduct audits of every stockroom annually. When samples are used, a statistically reliable method of selecting the items for audit should be used. The sample should be weighted to account for the relative value of the class of stock to be audited.

Recommendation (34e). The audit reporting format should be revised to include more specific information on the size and dollar value of errors. Greater attention should also be given to reporting use of improper procedures or failure to comply with policies. The audit report should be provided to district and resident engineers in a more timely fashion.

Recommendation (34f). DHT should consider simplifying quarterly inventory corrections by removing the approval requirement before a correction is processed. Supervisory review should focus on the corrected inventory reports and on audit reports.

Recommendation (34g). The DHT purchasing division should develop a training program for stockroom employees. Particular attention should be given to procedures for conducting quarterly inventories and correcting errors in the inventory. The importance of retaining proper documentation should be stressed.

Recommendation (34h). The purchasing division should require that all salvage parts be inventoried by the stock clerk and inventory records maintained. Salvage parts should be kept in controlled areas consistent with procedures for other parts and supplies. Salvaged road stock should be inventoried and records maintained on the amount and location of salvaged materials.

Recommendation (34i). Stockrooms should be considered areas of controlled access as is the case under current policy. DHT should improve compliance with limits on access. A bill of lading should be used to control shipment of parts and supplies from district to residency and area headquarters.

Recommendation (34j). The equipment division should post information on procedures for issuing gasoline at self-service pumps. Pumps should be locked in the absence of DHT personnel. All storage tanks should be equipped with locks.

Surplus Land. DHT has made strides in identifying and developing an inventory of surplus land holdings. However, the inventory is not complete and a check of property records in Richmond identified 12 parcels of state-owned land which were not on the department's inventory of residue parcels. In one of the 12 cases the land appeared to be used as a commercial parking lot without DHT knowledge.

Recommendation (35). The right-of-way division should complete its residue parcel listing and place a higher priority on disposing of large or valuable parcels. Random inspections of residue parcels should be conducted by district right-of-way staff to guard against improper use of DHT property. State agencies located near residue parcels should be notified and provided an opportunity to acquire such property.

Contract Administration. The interim report identified several weaknesses in procedures for monitoring contracts for performance and conflict of interest. For example, a review of prequalification lists found 37 firms which had failed to comply with the requirement to disclose affiliations which may create conflicts.

The engineering estimates used by DHT to check the validity of bids were found to have had virtually no effect on the eventual contract price. Bids rejected by DHT and subsequently rebid were lowered by contractors in less than one percent of the cases. The recent disclosures of bid-rigging on DHT contracts emphasizes the need for effective monitoring.

DHT also needs to closely monitor spending for project inspection and other construction engineering purposes. Federal policy disallows reimbursement for expenditures for construction engineering in excess of ten percent of the contract price. In 1981 DHT expended $750,000 on federal aid projects for construction engineering which was not reimburseable.

Recommedation (36). DHT should specifically monitor projects for construction engineering costs which are approaching ten percent of the contract price. Based on this information, the construction division should reassess staffing for these projects in order to minimize additional construction engineering costs.

Recommendation (37). Current dollar limits for approval of work orders by the construction engineer and chief engineer should be retained.

Inmate Labor

DHT employs correctional inmates to work on highway maintenance. The program benefits the Department of Corrections which received $2 million to support its programs. DOC also contends that having a portion of the inmate population out on work crews helps maintain discipline.

DHT also benefits from the work performed but contends that the costs are too great to compensate for the work accomplished. The cost to DHT is estimated at $3.8 million when indirect costs are considered. This amount would allow DHT to employ as many as 565 full-time employees at the minimum wage. In addition, there are special problems with the inmate labor program. For example, if one inmate becomes ill, the entire crew must be returned to the correctional facility because only one guard is available. As a result, DHT pays for the time away from camp for the full crew without accomplishing the work.

DHT is also out of compliance with statute which calls for paying corrections 75 percent of the comparable local hourly rate. If the minimum wage is assumed, DHT has fallen short of the payment requirement by $4 million over the last seven years.

Recommendation (38a). DHT and the Department of Corrections should restructure inmate labor crews with the goal of reducing costs. For example, DHT could dispense with one truck driver position on each crew by using the DHT foreman as the driver. This would reduce DHT costs by $1 million annually without any additional cost to corrections.

Recommendation (38b). The General Assembly may wish to consider funding use of inmates on the highways from sources other than the highway maintenance and construction fund.

Recommendation (38c). The Joint Subcommittee on Economic Productivity of the Prison Population and on the Work Release Programs should examine the language and intent of Section 53-109.1, *Code of Virginia* regarding the reimbursement paid to the Department of Corrections by the Department of Highways and Transportation for inmate labor.

Recommendation (38d). Better training should be provided to DHT employees who supervise or accompany inmates. A modified version of the training course provided by DOC to new guards should be considered for the DHT employees.

III. HIGHWAY AND TRANSPORTATION NEEDS AND FINANCING

The previous chapter identified a number of key improvements in DHT planning, programming, and budgeting which are necessary to provide the General Assembly with information to use in budget deliberations. The proposed changes are necessary to make DHT more accountable for the expenditure of appropriated funds. A recap of these improvements include:

1. Preparation of an annual maintenance program which incorporates the use of a pavement management system, improved bridge rating system, and routine maintenance standards which accurately reflect departmental budget targets. The program should identify at least two levels of funding. One would represent a minimum level necessary for protection of the highway investment and provision of reasonable levels of safety and comfort. Other funding options would identify higher desirable levels of service. The program should receive Highway and Transportation Commission endorsement. A draft program should be prepared by January 1983 and an approved program by the 1984-86 budget development cycle.

2. Preparation by January 1982 of a four- to six-year highway construction program for Virginia which presents proposals for construction spending based on an analytic framework of need which includes, but is not limited to, factors such as federal aid availability, traffic volume and congestion, structural condition, safety and local government priorities. The program should have Highway and Transportation Commission endorsement.

3. Adoption of a strategy to address the current imbalance between statutory allocations and actual expenditures among highway systems.

4. Adoption of procedures to ensure compliance with the provisions of the Appropriation Act and capital outlay provisions of statute.

5. Establishment of a directorate for public transportation within DHT and preparation of a comprehensive report on public transportation needs based on evaluations of transit system efficiency and operations by the public transportation engineer as required by statute.

6. Organizational consolidation of the planning, programming, public transportation and financial affairs functions under a deputy commissioner who can provide adequate coordination to the development of comprehensive and realistic budget options.

7. Continued attention to such cost reduction techniques as value engineering, methods improvement, engineering research, and systematic control of functions such as personnel, purchasing, inventory, information systems development, and establishment of performance standards for field operations.

The following examination of highway and transportation funding needs should be viewed within a framework of these recommended changes. The resulting improvements in future needs assessment should do much to clarify the range of funding options open to the General Assembly.

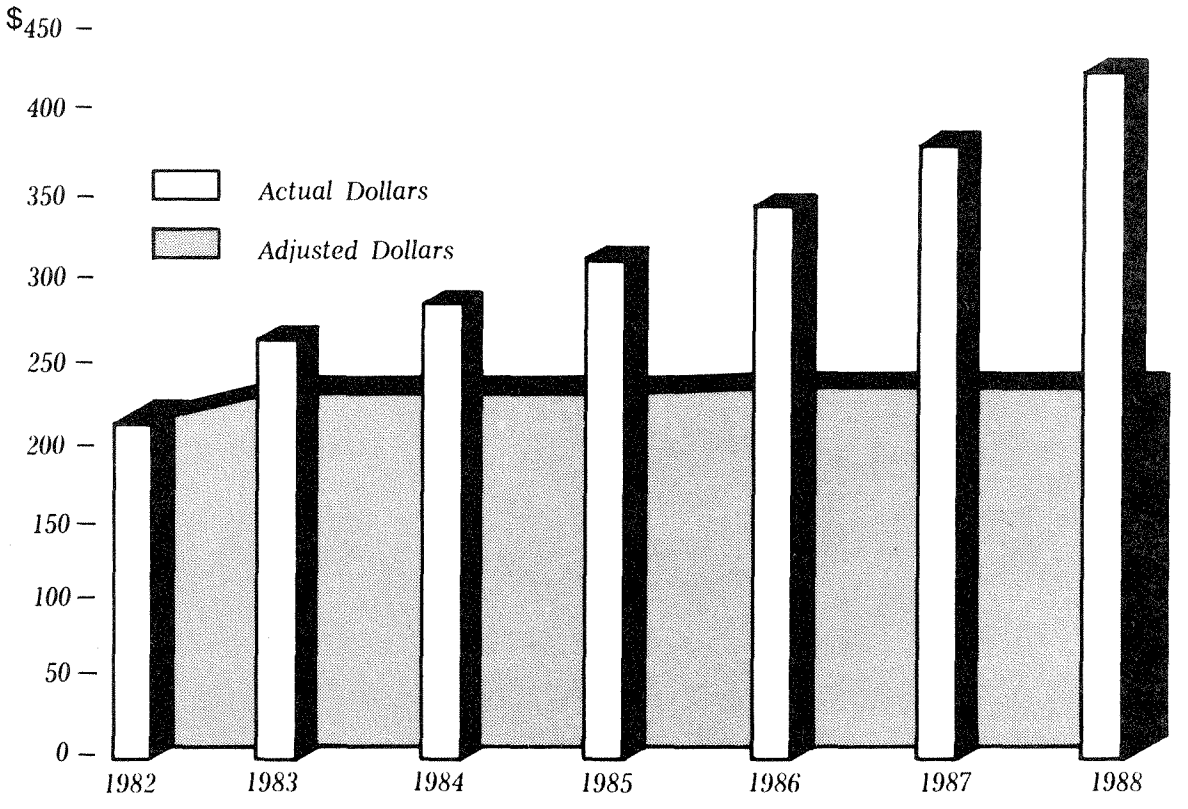
HIGHWAY AND TRANSPORTATION FUNDING NEEDS

This section projects funding requirements for highway and transportation programs for the 1982-84 biennium. DHT's budget requests for 1982-84 and a proposed critical improvement program are described. A separate needs analysis conducted by JLARC staff used available information about road conditions, traffic patterns, federal aid policies, and public transportation operations in Virginia to project alternative spending options for the biennium. Finally, four funding options are compared with two different projections of revenue available from the existing tax structure.

Maintenance Funding

DHT's proposed maintenance budgets for the next three biennia show little real growth beyond an expected 9.8 percent annual inflation (Figure 6). The 1982-84 budget adds $14.2

Figure 6
PROJECTED MAINTENANCE SPENDING
(dollars in millions)



million in new spending for increased pavement repair, sidewalk repair, and bridge replacement. Beyond this increase the budget projection is essentially flat, after eliminating inflationary effects.

The validity of the proposed budget rests heavily on the accuracy of past judgements of the need for maintenance replacement work. Until the pavement management system and bridge condition rating system are developed, there are no systematic means to test the validity of these previous judgements. Development of these monitoring systems is essential to legislative review of the maintenance budget. Refinements in routine maintenance standards to accommodate proposed service priorities will also improve future budget reviews.

DHT projects spending $548 million over the 1982-84 biennium for maintenance. This amount is used as a budget base, pending review of results of the recommended monitoring system.

Construction Funding

Identification of construction need is based on the assumption that total construction needs greatly exceed available revenues. Therefore, it becomes essential that projects be given priorities based on some objective criteria. The JLARC study used six criteria to evaluate over 1,000 possible construction projects. These were:

1. ***Timing of the Funding Need.*** The long lead time which characterizes development of project plans means that many identified projects are outside the six-year planning period of the 1982-84 budget. Regardless of relative merit, these projects were not considered to be current funding needs.
2. ***Federal Aid Availability.*** Federal aid will reimburse the State for between 75 and 90 percent of construction costs of eligible projects. Federal funds apportioned

to Virginia but not used can lapse and, in some cases, be claimed by other states. Therefore, it is logical to ensure that sufficient federal aid-eligible projects are programmed to use Virginia's full apportionment. In the case of interstate funds, full use of federal aid is required by law.

3. *Structural Condition.* Many of Virginia's rural roads, both primary and secondary, are experiencing structural deterioration, such as severe cracking or shoulder separation from the pavement. In many cases the structural damage is the result of road geometrics that are inadequate for present traffic. Where deterioration is present, reconstruction becomes essential to avoid further damage.
4. *Traffic Conditions.* Some roads proposed for widening or other reconstruction work are carrying vehicle concentrations beyond their design standards. These roads have also been found to contain most of the safety hazards attributable to road condition.
5. *Local Priorities.* Construction projects in urban areas are required to receive local government endorsement prior to construction. These priorities help define whether a project is viable for construction in the immediate future.
6. *Bridge Condition.* Records in the DHT bridge division were used to identify bridges which are structurally damaged or otherwise in need of immediate attention.

Based on these criteria, high priority construction funding needs were identified. The results are shown in Table 3. This spending level would accomplish several objectives. First, it would ensure sufficient funds are available to match the expected $1.5 billion in federal aid that is to be available over the next six years. Second, it would provide for reconstruction of rural roads which are now structurally deteriorating. Third, it would provide funds to complete or advance to construction each of the 82 urban projects now awaiting funds. Finally, it would continue State reconstruction work on low volume local roads.

The analysis also addressed the impact of cost inflation on funding these high priority projects. Although federal aid would provide 79 percent of the total funding requirement of the construction program as expressed in 1980 dollars, federal policy has not previously made provision for inflation. Therefore, full funding of the six-year program will require additional State funds to compensate for inflation.

Table 4 shows the six-year funding requirements for the high priority construction

Table 3

HIGH PRIORITY CONSTRUCTION FUNDING NEEDS

(Candidates for Funding for FY1983 - FY1988)

Reason for Priority	Value of Projects (1980 dollars)
• Continue interstate work	$1,197 million
• Structurally deficient roadway (Primary and Secondary Systems)	173 million
• Structurally deficient bridges (all systems)	149 million
• Locally-endorsed urban area projects ready for construction (Primary and Urban Systems)	289 million
• Local road work at fifty-five percent of prior funding levels (Secondary System)	139 million
Total	$1,947 million
Funding Source: Federal	$1,533 million
State	$ 414 million

Table 4
HIGH PRIORITY CONSTRUCTION
ADJUSTED FOR INFLATION, BY FUNDING SOURCE
(FY 1983-FY 1988)
(dollars in millions)

Fiscal Year	Expected Federal Aid	State Matching Funds Required	Other State Funds Required	Total
1983	$ 241	$ 43	$ 50	$ 334
1984	252	41	74	367
1985	254	41	88	383
1986	262	42	103	407
1987	262	42	118	422
1988	262	42	136	440
Total	$1,533	$251	$569	$2,353

Funding Source
Federal: $1,533 million
State: $ 820 million

program, assuming an eight percent inflation rate. For practical purposes it was assumed that the State would not attempt to compensate for inflation in funding interstate construction because of the high cost of such a policy. (Using State funds to compensate for inflation in interstate construction would require $205 million in State funds over six years and raise Virginia's effective matching ratio from 10 percent to 30 percent of construction cost.) Other projects on the primary, urban and secondary systems were adjusted to provide an adequate mix of State and federal funds to complete construction by the end of FY 1988.

Using this approach, construction funding requirements for the 1982-84 biennium would be $701 million, including $208 million in State funds and $493 million in federal aid.

Public Transportation Funding

The DHT request for 1982-84 includes $31.5 million in State and federal funds for transit assistance. This is approximately $6.7 million less in State funds than are provided in the current biennium. According to DHT, the cutback is primarily the result of the expiration of a letter of agreement dating from 1972, which provided $3.5 million annually to the Northern Virginia Transportation Commission for construction of parking and commuter facilities.

The extent of State support for public transportation is a policy matter that should be considered by a joint legislative committee, as suggested previously. For the purposes of this report, options have been included which project requested funding, as well as provide sufficient State funds to allow the General Assembly to continue financial assistance to mass transit at 1980-82 budget levels. This "maintenance of effort" option would increase State funding requirements from $12.3 million to $16 million annually and would not affect the availability of federal funds which are administered by the public transportation division.

Other Funding

Other funding requirements for the 1982-84 biennium include DHT administrative costs, preconstruction costs for future construction, highway and transportation planning and research, transfer of funds for urban maintenance assistance payments, and motor fuel tax apportionments for Henrico and Arlington County, as required by statute. In addition, funding requirements include support for programs of other agencies, including principally those of the Division of Motor Vehicles and the State Corporation Commission. DHT has requested a total of $403 million for these funding requirements in 1982-84.

Summary of Funding Needs

Establishing funding needs for the 1982-84 biennium depends primarily on the level of highway construction to be authorized by the General Assembly. A review of statute and legislative history suggests that a minimum appropriation of State funds sufficient to match federal aid within the statutory allocation formulas would be consistent with legislative intent. This funding level is shown in the following paragraphs as Option I.

Option II is based on an assumption that the General Assembly wishes to fund the high priority construction needs described in Tables 3 and 4. Because Option II would not precisely match the amount needed to satisfy the allocation requirements of Sections 33.1-23.1 and 33.1-23.1:1 *Code of Virginia* a third budget option that would add an amount to satisfy allocation formulas is shown as Option III. Finally, Option IV has been prepared on the basis of a recently developed "critical improvement program" which has been circulated in draft form by DHT.

Option I. A minimum program would require $1,590 million for 1982-84, including $607 million for construction. This option would allow DHT to match all federal aid apportionments and satisfy statutory allocation formulas.

Option II. A high priority program would require $1,684 million to be appropriated during the biennium, including $701 million for construction. These funds would match all available federal aid and provide a reasonably balanced construction program for the primary, urban, and secondary systems. An important aspect of Option II is that more spending can be targeted at the urban and secondary systems because the budget is less constrained by the need to use all funds to match federal categorical programs. In fact, virtually all of the $94 million increase in Option II construction spending over that shown for Option I is for the urban and secondary systems. In perspective, however, even the Option II construction program would provide only 59 percent of the purchasing power of 1978-80 construction spending.

Option III. A supplemented high priority program assumes the same basic construction notions as Option II, but with the addition of $58 million which would provide sufficient revenues above high priority projects to satisfy the statutory allocation of funds among highway systems.

Option IV. A "critical improvements" program was developed by DHT. The program is in draft form and is under review by the Highway and Transportation Commission. It is said to include all of the critical highway needs in the State. The program does not assume that any further priorities among the critical project needs are to be determined. These options are described in Table 5.

REVENUE FORECASTS

A special study was made of 1982-84 revenue projections which have been endorsed by DHT, DMV, SCC and the Secretary of Transportation. Based on that study, staff from JLARC and the Virginia Highway and Trans-

Table 5
PROGRAM CONTENT OF SPENDING OPTIONS
(1982-84 biennium, dollars in millions)

Purpose	Option I	Option II	Option III	Option IV
Maintenance	$ 548	$ 548	$ 548	$ 548
Public Transit	32	32	32	40
Administration	108	108	108	108
Transfers	270	270	270	270
Preconstruction	25	25	25	45
Construction	607	701	759	945
Total	$1,590	$1,684	$1,742	$1,956

Note: Public transit funding does not include federal aid for localities which is passed through the public transportation division.

portation Research Council prepared alternative forecasts which appear to be more consistent with available projections of motor fuel consumption.

The official revenue estimates for the 1982-84 biennium project total receipts from all State sources of $1,090 million. Revenues are dominated by three sources: the motor fuel tax ($628 million or 58 percent), the sales and use tax ($181 million or 17 percent), and vehicle registration fees ($154 million or 14 percent).

DHT Forecast Concern. Over the last five years the official forecasts have varied from actual collections by significant amounts (Figure 7). More importantly, the 1982-84 forecasts include revenue projections for the motor fuel tax which appear, at this time, to be overly optimistic. Specifically, the official forecasts appear to take into account an expected increase in travel, which is projected to rebound from a 1982 low point at the rate of about 2.5 percent annually. However, at the same time, the Federal Highway Administration and the U.S. Department of Energy project significant increases in the fuel efficiency of the typical automobile. As a result, motor fuel tax revenues paid per mile of travel are projected to decline steadily through 1986. This fact will cancel out the effects of increased travel and result in steadily declining motor fuel tax revenues for Virginia.

Alternative Forecasts. The methodology used in the alternative forecast for 1982-84 is described in a separate JLARC report. The alternative forecast for the major revenue sources and total State projections is shown in Table 6. The table shows that the alternative forecast would produce $44 million (4 percent) less in revenues than the official estimates.

Although revenue forecasting is always subject to error, the magnitude of the difference between the two estimates is cause for concern. DHT experienced a $22 million shortfall between revenue estimates and actual collections in FY 1981, and Table 6 suggests that similar shortfalls will be encountered in FY 1983 and FY 1984.

Comparison of Funding Needs and Revenues

Comparing the funding options presented earlier with the revenue forecasts provides an evaluation of the current tax structure's ability to provide revenues adequate for each spending option. Table 7 summarizes the comparison for 1982-84 and projects the comparison for the

Figure 7
OFFICIAL REVENUE ESTIMATE ACCURACY
(amounts over and under projections)
(FY 1977 - FY 1981, dollars in millions)

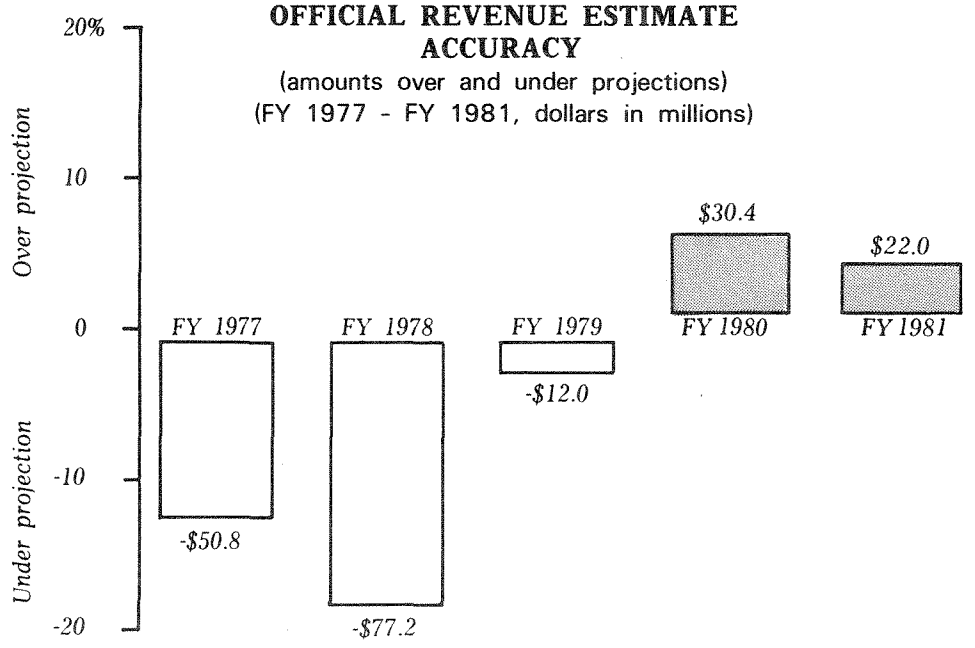


Table 6

1982-84 STATE REVENUE ESTIMATES
(dollars in millions)

Source	Official State Estimates	Alternative Estimates	Difference
Motor Fuel Tax	$ 627	$ 573	-$54
Sales and Use Tax	181	186	+ 5
Vehicle Registration	155	160	+ 5
Other	127	127	—
Total	$1,090	$1,046	-$44

Source: Department of Planning and Budget, JLARC.

1984-86 biennium using the best available estimates for revenues available in the mid-decade.

Revenue Shortfalls. Table 7 shows that it will not be possible to comply with statutory allocation formulas and match federal aid apportionments using projected revenues. Funds are likely to fall short of need by between $7 million and $51 million for the biennium, with the shortfall occurring in the second year. For the other three options, the magnitude of the shortfall steadily increases. For example, funding Option II high priority projects will call for an additional $101-145 million over the biennium. Funding the Option IV critical improvement program for 1982-84 will require an additional $373 million based on the official revenue estimates for 1982-84, and as much as $417 million based on the lower JLARC estimates.

Table 7 also highlights the impact of inflation coupled with slow revenue growth on the construction program for the 1984-86 biennium. Shortfalls for even the minimum program exceed $200 million. The high priority projects would require $347 million in additional funds, and the critical improvement program would require $549 million above projected revenues.

Implications of the Revenue Gap. Even for the minimum construction program option, with no additional funds and no change in existing statutory allocation formulas, Virginia would be unable to match between $21 million and $207 million in available federal aid over the 1982-84 period, depending on the revenue actually received. In order to prevent this loss in federal aid funds for construction, DHT would have to impose cuts in maintenance and departmental administration of between one percent ($7 million) and eight percent ($51 million).

The resulting $607 million minimum construction program would provide 49 percent of the purchasing power of the 1978-80 program and would concentrate the great majority of construction spending on the interstate system, federal-aid primary routes and bridge replacement. Spending priorities would be heavily influenced by the need to use available funds wherever necessary to match categorical aid programs. For example, one likely distribution of funds would give interstate spending approximately $374 million (62 percent) of the total budget. Federal-aid primary routes would receive $88 million (15 percent) and the bridge replacement program would have $81 million (13 percent). Total spending other than for bridge replacement on the urban and secondary systems combined would be approximately $64 million (11 percent).

It is also clear that DHT could not embark on any sort of construction program beyond the minimum level. The revenue shortfalls shown in Table 7 are beyond what could be obtained from across-the-board cuts in maintenance or administration.

In summary, the analysis of revenues and expenditure requirements shows that there are two primary options open to the General Assembly for the 1982-84 biennium. First, the department could be required to reduce spending for maintenance and administration in

Table 7

DHT BUDGET OPTIONS AND REVENUE ESTIMATES

(1982-84 and 1984-86, dollars in millions)

	Expenditures		Revenue Estimates			
Budget Option I (Minimum Budget)						
Fiscal Year	Construction	Total	JLARC Estimate	Over(under)	Official Estimate	Over(under)
1983	$290	$ 757	$ 760	$ 3	$ 781	$ 24
1984	317	833	779	(54)	802	(31)
1982-84	$607	$1,590	$1,539	$ (51)	$1,583	$ (7)
1984-86	$654	$1,859	$1,648	$(211)	$1,657	$(202)
Budget Option II (JLARC High Priority Budget)						
1983	$334	$ 801	$ 760	$ (41)	$ 781	$ (20)
1984	367	883	779	(104)	802	(81)
1982-84	$701	$1,684	$1,539	$(145)	$1,583	$(101)
1984-86	$790	$1,995	$1,648	$(347)	$1,657	$(338)
Budget Option III (JLARC High Priority Projects Supplemented Budget)						
1983	$362	$ 829	$ 760	$ (69)	$ 781	$ (48)
1984	397	913	779	(134)	802	$(111)
1982-84	$759	$1,742	$1,539	$(203)	$1,583	$(159)
1984-86	$858	$2,063	$1,648	$(415)	$1,657	$(406)
Budget Option IV (DHT Critical Improvements Budget)						
1983	$468	$ 944	$ 760	$(184)	$ 781	$(163)
1984	477	1,012	779	(233)	802	(210)
1982-84	$945	$1,956	$1,539	$(417)	$1,583	$(373)
1984-86	$940	$2,197	$1,648	$(549)	$1,657	$(540)

order to fund a construction program which matches available federal aid and complies with statutory allocations. These cuts would be relatively minor–approximately one percent–if official revenue estimates are accurate. On the other hand, the cuts would need to be more drastic–up to eight percent–if the shortfall approaches JLARC estimates. In either case the resulting construction program would be dominated by federal aid categories and would provide sharply limited funding opportunities for the urban and secondary systems. Additional funds, in terms of new revenue, would be required for 1984-86.

Should the General Assembly seek to fund a construction program which addresses broader construction needs, particularly for the urban and secondary systems, additional new revenue will be required during 1982-84. Therefore, the second option open to the legislature is to review the existing tax structure for revenue adequacy within acceptable bounds of equity and administrative efficiency.

IV. HIGHWAY AND TRANSPORTATION FUNDING ALTERNATIVES AND TAX EQUITY

One of the major analytic efforts of the SJR 50 study series was an evaluation of the equity of Virginia's highway user taxes among vehicle classes. Long-established State policy calls for highway users to pay for the highway system in proportion to the cost of providing facilities adequate for their use. An empirical study of the relative costs and revenue contributions of highway users in Virginia was conducted for 1980; the results were used as the basis for projecting tax equity in the 1982-84 biennium and through the mid-decade.

The review also covered that component of highway and transportation revenues which are considered to be fees-for-service, apart from contributions for highway construction and maintenance. These fees include payments for operator permits and motor vehicle title registration. The degree to which these programs recover their administrative cost is a second major equity concern.

Finally, Virginia's truck weight regulation program was evaluated. Truck weight enforcement is an important equity issue because operating at excessive weights can cause road damage costs far in excess of the revenues received from an individual highway user.

1980 Cost Responsibility Study Results

The results of the 1980 analysis are presented in a separate report *Vehicle Cost Responsibility in Virginia*. In general, the study found that Virginia's tax structure can be considered equitable, with a total imbalance of costs and revenues by user class of 3.2 percent. In other words, of $604 million in State and federal user charges paid by Virginia highway users in 1980, only $19.1 million was paid by users beyond their cost responsibility. Specifically, passenger cars and light (panel and pickup) trucks were found to be overpaying their cost responsibility by $19.1 million, while medium and heavy trucks were underpaying by a like amount (Table 8).

While the study finding showed general taxing equity, medium weight trucks were found to be underpaying their cost responsibility by proportions which suggest a need for a change in the tax structure. Two-axle, six-tire trucks underpaid their cost responsibility by 38 percent while larger, three-axle, single unit trucks underpaid by 14 percent.

The key consideration with regard to these vehicles is that they operate at weights which require significantly stronger pavements and bridges to accommodate their use. For example, although two-axle, six-tire trucks are less than four percent of the total traffic stream in Virginia, these vehicles were found to be responsible for 14 percent of pavement construction costs, eight percent of bridge construction costs and 22 percent of pavement maintenance costs. Despite this heavy cost

Table 8

RESULTS OF THE 1980 COST RESPONSIBILITY ANALYSIS

	Class I Autos, Light Trucks	Class II Two axle, Six Tire Trucks	Class III Three axle Single Unit Trucks	Class IV Tractor Trailers
Percent of Costs for which Responsible	70.9%	8.5%	4.5%	16.1%
Percent of Revenue Contributed	74.0%	6.1%	3.9%	16.0%
Overpayment/Underpayment in Revenue Compared to Cost	$19.1 million overpaid	$14.3 million underpaid	$4.1 million underpaid	$ .7 million underpaid

responsibility, two-axle, six-tire trucks are exempt from the two cent road tax surcharge and pay an average registration fee of less than $60 annually. The combination of motor fuel tax revenues plus relatively low registration fees does not adequately compensate the Commonwealth for the costs incurred on behalf of these vehicles.

Recommendation (39). The General Assembly may wish to address the existing taxing inequities with regard to single unit trucks registered above 6500 pounds. The provisions of Section 46.1-154, *Code of Virginia* or other taxing provisions could be used to increase payments by single unit trucks other than pickup or panel trucks, commensurate with their responsibility for highway construction and maintenance costs. Options for the amount and method of addressing the current inequity are provided in a later section of this report.

Recovery of Administrative Costs

Some highway and transportation revenues are used for purposes other than highway construction and maintenance, transit assistance or related administrative costs. For example, in 1982-84 a projected $117 million will be used to fund the operating programs of 12 other agencies. Over 96 percent of this amount will be used for the operations of two agencies: the Division of Motor Vehicles and the State Corporation Commission.

Several programs of DMV and SCC which are supported by highway and transportation revenues provide services to individuals. For example, DMV administers programs for vehicle title registration, operator permits, and vehicle dealer licensing. DMV also spends $2.6 million annually copying and certifying records. Fees are charged for each of these services. However, most of the fees have not been increased for a number of years. A cost analysis of DMV operations found that, overall, fees charged by DMV fell short of recovering administrative costs by $4.1 million. In order to make these programs self-supporting, fees would need to be increased (Table 9).

A similar situation exists with regard to SCC administration of the road tax on heavy trucks. There is an annual charge imposed under statute to defray the cost of permits issued to vehicles subject to the road tax. The

Table 9
DMV FEE ADJUSTMENTS NECESSARY TO MAKE SERVICES SELF-SUPPORTING
FY 1981

Fee for Service	Current Fee	Adjusted Fee	Date of Last Adjustment
Title Registration			
-Original	$ 7.00	$ 9.36	1974
-Transfer	7.00	9.36	1974
-Repossession	7.00	9.40	1974
-Duplicate	2.00	2.04	prior to 1950
-Supplemental Lein	5.00	5.13	1965
-Salvage	5.00	5.12	1980
Reinstatement Fees	25.00	40.12	1973
Driver Improvement Clinic	20.00	114.77	1975
Bad Check Fees	$10 or 10%	24.00	1976
Dealer Licenses			
-Dealer	50.00	56.78	1977
-Salesmen	5.00	5.63	1977
-Supplemental Location	15.00	16.64	1977

Source: JLARC Analysis of DMV Vehicle and Driver Services Data.

statute appears to limit the annual charge to the amount needed to defray costs of permit issuance. However, since the permit is primarily issued to facilitate road tax collection, it would be logical to include all administrative costs under the recovery provisions of the statute. Currently, $1.4 million in SCC administrative costs are not recovered from the permit fees. Increasing permit fees from four to six dollars annually would make road tax collections self-supporting.

A third area where revenues fail to compensate for administrative costs is vehicle registration and licensing under § 46.1-149 and 46.1-154, *Code of Virginia*. Although vehicle licenses are viewed primarily as a user charge, the cost of issuing and recording vehicle licenses is over $16 million annually. In other words, 18 percent of vehicle license fee collections is not available for highway purposes. Vehicle licensing rates for most vehicles, including automobiles, have not been increased since 1964. During the past 12 years, DMV's administrative costs have increased an average of 12 percent annually. As a result, a much larger proportion of the charge for a vehicle license is being used to offset program administration, and a correspondingly smaller proportion is available to contribute to highway construction and maintenance costs.

Increasing the vehicle license charge for vehicles registered in Virginia by $3.60 annually would free $16 million for use in highway construction and maintenance programs (Table 10). For example, passenger car fees would increase from $15 to $18.60, while the administrative portion of the graduated truck registration scale would increase from $5 to $8.60.

Table 10

BASE RATE FOR VEHICLE LICENSE FEE ADJUSTMENTS TO COMPENSATE FOR INCREASED ADMINISTRATIVE COST

(excluding weight-graduated charges)

Vehicle Type	Current Fee (Under 4000 lbs/over 4000 lbs)	Adjusted Fee (Under 4000 lbs/over 4000 lbs)
Motorcycle	$ 8	$11.60
Passenger car, motor home, trailer, taxicab, church bus, pickup and panel trucks under 6,500 lbs.	$15/$20	$18.60/$23.60
Public/private bus[1]	$15/$20	$18.60/$23.60
Common carrier of passengers[1]	$ 5/$10	$ 8.60/$13.60
Other passenger carriers	$ 5/$10	$ 8.60/$13.60
Trucks and farm vehicles		
6,500 lbs-10,000 lbs	$22	$25.60
10,000 lbs-76,000 lbs[1]	$ 5	$ 8.60

[1]These are base rates which are supplemented with a separate variable charge per 100 or 1,000 pounds of registered vehicle weight.

Recommendation (40). The General Assembly may wish to amend Sections 46.1-149 and 46.1-154, *Code of Virginia* to increase licensing and registration fees to fully recover costs. DMV should periodically review vehicle registration and licensing costs and make recommendations for adjustments to the General Assembly.

Recommendation (41). The General Assembly may wish to amend the appropriate sections of the *Code of Virginia* to adjust fees charged by DMV for title registration, operator permits, dealer licenses, copy and certifying services, driver improvement clinics, mileage permits and miscellaneous services, to more fully recover administrative costs. DMV should conduct biennial cost audits to determine the adequacy of revenues to offset administrative costs and make recommendations for adjustments to the General Assembly. (Adjustments required for 1981 are illustrated in Table 9.)

Recommendation (42). The General Assembly may wish to amend Sections 56-291.13 and 56-304.4, *Code of Virginia* to extend the use of revenues received under these provisions to defray the cost of collection of the road tax, and provide for fees which more fully cover the cost of administering the registration and road tax collection program. The legislature may wish to consider establishing a separate self-supporting special fund within the SCC for administration of the road tax statute and grant the SCC authority to adjust the fee level as appropriate.

Truck Weight Regulation

Virginia has regulated truck weight for almost one-half a century. In FY 1980, 7,518,-907 trucks were weighed and 20,693 citations were written. However, several problems with the weight regulation program result in inequities. These include low liquidated damage rates, traditional weight tolerances, bypassing of scales and weak enforcement practices, and the granting of overweight permits.

Liquidated Damages. Liquidated damages are charged to recover the cost of road damage resulting from overweight operation. Table 11 shows the liquidated damage rates in force in Virginia compared to those in neighboring states. Virginia's rates have been in effect since 1956, while the cost of road maintenance has increased steadily—250 percent in the last decade alone. Increasing Virginia rates to the amounts shown would generate $3.3 million annually to help offset the increased maintenance costs.

A second concern with liquidated damages is the enforcement consistency of the courts. DHT contends that some courts are reducing or suspending liquidated damage assessments for first offenses in excess of 2,500 pounds overweight, which is inconsistent with the language in §46.1-342, *Code of Virginia.* A 1978 Attorney General opinion supports the DHT interpretation of statute. A review of 1,858 violations issued in the month of October 1980 found that, using conservative estimating techniques, as much as $1 million annually in mandatory liquidated damages are not, in fact, assessed by the courts.

Recommendation (43). The General Assembly may wish to consider increasing liquidated damages imposed under §46.1-342, *Code of Virginia,* to levels more comparable with neighboring states.

Recommendation (44). The General Assembly may wish to inform courts about the provisions and intent of the liquidated damage statute and/or clearly separate fines which courts may suspend and penalties which courts may not suspend.

Statutory Tolerances. Under current policy, enforcement officers grant "administrative variances," or tolerances, for trucks operating above the legal weight limits. A five percent tolerance has been commonly used since 1932. Weigh station personnel confirm that truck operators routinely "load to the tolerance" and that, for all practical purposes, the effective weight limits are five percent above those established in law. However, the five percent tolerance is not based in statute and, in the opinion of the Attorney General, the exercise of discretion in the enforcement of the weight limit laws should be based on case-by-case considerations, such as scale inaccuracy or the accumulation of ice or snow.

The use of blanket enforcement tolerances in this manner has two effects. First, because the tolerance is applied to the single and tandem axle-weight limits, Virginia's effective axle-weight limits exceed the federal maximums of 20,000 and 34,000 pounds, respectively (Table 12). Trucks can therefore legally operate on Virginia primary and secondary highways with axle weights greater than those allowed on the interstate system, despite the fact that the interstate is designed to greater strength than primary and secondary roads. Axle-weight, not gross weight, is the important consideration in weight-related pavement damage. Therefore, Virginia is running a greater risk of avoidable pavement damage than is considered acceptable for the interstate system.

The second problem is the fact that trucks registered in Virginia pay a graduated registration fee only up to the statutory maximum of

Table 11

LIQUIDATED DAMAGE ASSESSMENT RATES IN SELECTED STATES

	Liquidated Damage Rates (cents/pound)			
Over Weight	Virginia	Maryland	N. Carolina	Adjusted Virginia Rates
0 - 2,000 lbs.	2 cents	5 cents	2 cents	4 cents
2,000 - 5,000 lbs.	2 cents	5 cents	4 cents	4 cents
Over 5,000 lbs.	5 cents	12 cents	10 cents	10 cents

Table 12
ENFORCEMENT TOLERANCES

Weight Group	Legal Limits	With Tolerance
Gross	76,000	79,800
Tri-Axle	50,000	52,500
Tandem Axle	34,000	35,700
Single Axle	20,000	21,000

Source: Federal Certification Plan.

76,000 pounds gross vehicle weight, but they may operate at 79,800 pounds. A hidden exemption is therefore granted for a portion of the registration fees for trucks operating between 76,000 and 79,800 pounds. At the $12 per thousand-pound rate applied to for-hire carriers, the exemption is $48 per truck. The exemption for private carriers is $36. Based on 1980 registrations, the value of this exemption is approximately $724,000 annually. This assumes that the 16,600 trucks currently registered in the 55,000-76,000 category would move up to the higher maximum.

Recommendation (45). The General Assembly should consider increasing the gross vehicle weight limit for five-axle vehicles to 80,000 pounds, with extension of the top of the graduated registration fee scale in Section 46.1-154 to the revised maximum. Axle weight limits now established under Section 46.1-339(b) (c) should not be changed.

The General Assembly may also wish to amend the statute to eliminate the use of tolerances altogether or limit their application to specified conditions.

Bypassing and Enforcement. Trucks operating overweight or otherwise illegally can easily bypass 12 of Virginia's 14 permanent weigh stations. Bypassing is generally acknowledged to be a problem by both DHT personnel operating weigh stations and State police. In one five-hour period, JLARC staff observed at least 15 and possibly as many as 64 trucks bypassing the Sandston scale on I-64.

In order to better control bypassing, increased patrolling of bypass routes is needed. Patrolling by state police is limited to available manpower and is often insufficient. One option already used in two areas of Virginia is coordinated patrolling by State and local police. This approach could substantially improve coverage of major bypass routes. In order to encourage such coordinated effort, some portion of the revenue received from increases in liquidated damages could be used to help local jurisdictions defray the cost of increased patrolling.

Another potential improvement in enforcement is the use of better portable scales by DHT's nine mobile weighing units. Scales now used by the units are outdated and inefficient. Newer scales are available and some have been purchased by DHT.

A third option for truck weight enforcement is to mandate offloading. Both North Carolina and Maryland require truck operators to offload a portion of their cargo if they are found to be operating in excess of legal weights. Virginia law permits offloading, but in practice, trucks are never required to offload. Options are open to Virginia enforcement officials to increase the use of offloading as a deterrent. For example, adopting the North Carolina practice would call for mandatory offloading of vehicles found to be 5,000 pounds or more overweight at permanent scales. About 2,475 trucks annually could be subjected to this provision in Virginia, although the deterrent effect would suggest that the actual number would be less.

Recommendation (46). The General Assembly may wish to explore means of encouraging increased patrolling of major bypass routes by local police. Use of some portion of liquidated damage receipts under a cooperative agreement could provide a means of defraying the additional cost to localities of patrolling.

Recommendation (47). With the intent of eliminating the van and driver now required for transportation of older type scales, DHT should expedite the purchase and use of compact portable scales for the mobile weigh units.

Recommendation (48). The Department of State Police and DHT should develop and adopt a policy for offloading that would provide a practical deterrent to overweight operations.

Permits. Permits are issued and fees charged for any load which cannot be reduced to legal dimensions or weight. Certain industries which haul divisible loads have been granted special privileges for hauling oversize loads, however, and these six categories are exempted from paying fees for permits (Table

13). Granting special privileges to some classes of trucks by permit has been challenged in court by operators who have not been granted this privilege. Since the practice is now in litigation, no recommendation is practical. However, it should be pointed out that the practice greatly increases stress on the highways and may cause increased maintenance costs. Granting permits to one category of vehicles in a class of vehicles also results in an internal class subsidy when equity relationships are calculated.

Enforcement of permit requirements is generally adequate. However, DHT and the State Police report that two problems with the permit system weaken its effectiveness with regard to coal trucks.

Coal haul permits allow three-axle trucks to transport coal for up to 35 miles with a gross vehicle weight of 60,000 pounds and axle weights of 24,000 pounds for a single axle and 45,000 pounds for a tandem axle. Trucks with a tri-axle may carry up to 50,000 pounds on the rear combination of axles. These axle weight limitations are far above the normal limits and allow each vehicle to carry considerably more coal than would otherwise be possible.

The penalty for exceeding the permit and operating overweight is a flat $250, regardless of the amount overloaded. While this provision appears to be more strict than a graduated cents-per-pound assessment, DHT personnel indicate that it actually encourages overloading.

Since an overweight violation of 5,000 pounds would produce a liquidated damage assessment of $250, operators of coal trucks essentially run no additional risk in loading to much higher weights. DHT personnel report that violations of 10,000 to 20,000 pounds are not uncommon. Overloading a tandem axle by 20,000 pounds generates 187 percent more pavement stress than a 5,000 pound overload and therefore greatly increases the likelihood of pavement damage. The flat $250 penalty would appear to be too low to fairly compensate the Commonwealth for damage caused by greatly overloaded coal trucks.

A second concern raised by DHT is the tendency of the courts in several southwestern Virginia counties to suspend penalties for overweight operation. For example, in two counties with substantial coal truck operation, 67 percent of the permit violation penalties and 66 percent of all other weight violations assessed against coal trucks have been suspended over the last 15 months.

Recommendation (49). The General Assembly may wish to review the rate assessed for violation of coal haul permits to determine whether the levy adequately reflects an assessment of liquidated damages.

Funding Alternatives

The previous section showed that cuts in maintenance and departmental administration, in combination with adjustments to various fee schedules and truck weight enforcement prac-

Table 13
SPECIAL PERMITS ISSUED

Category	Maximum Axle Weight	Maximum Tandem Weight	Maximum Gross Weight	Permits Issued
Containerized Cargo	20,000	34,000	78,000	2,340
Coal Haul - 3 axle	24,000	45,000	60,000	
- 4 axle	24,000	50,000	70,000	1,815
Concrete Mixer	20,000	40,000	60,000	626
Farm Purchase - 3 axle	20,000	36,000	50,000	
- 4 axle	20,000	36,000	76,000	28
Refuse Collection	20,000	36,000	56,000	None
Old Equipment	Variable	Variable	Variable	None
Total				4,809

Source: DHT Maintenance Division Annual Report, FY 1981.

tices, could provide enough revenue to match federal aid funds without an increase in the major taxes for highways and transportation. However, the resulting construction program would be dominated by interstate construction and provide little funding flexibility for the urban and secondary systems. Additional revenue would be needed for 1984-86 or Virginia would lose over $500 million in federal aid.

Should the General Assembly desire to increase construction funding for 1982-84, a number of options are available. This section reviews several means of altering the existing tax structure while also improving or maintaining the equity of current tax policies.

Four Options. The four levels of construction programs described in Table 7 are used to illustrate the range of funding requirements and corresponding tax options. The tax options include adjustments to fee-for-service programs and truck weight regulation described previously (Table 14), as well as proposed reductions in DHT-requested appropriations for maintenance and administration of $16 million over the 1982-84 biennium. This reduction is based on projected savings identified in the JLARC review of DHT administration (Table 15).

Each of the four funding options is described in the two-page tables on pages 38-45. These tables show:

- the amount of additional revenue required;
- a series of proposed actions to generate the needed revenue; and
- an analysis of the resulting equity by vehicle class.

The tables illustrate the ways in which combinations of tax policies can be used to generate needed revenue and maintain equity. Other combinations are possible; each should be subjected to an analysis of revenue capacity, equity impacts, and administrative feasibility.

Table 14
ANNUAL FUNDS AVAILABLE FOR 1982-84 AND 1984-86 FROM ADJUSTMENTS TO SERVICE FEES AND TRUCK WEIGHT REGULATION PROGRAMS
(projected from 1980 data)

Option	Estimated Annual Revenue Generated
Increase vehicle license fees	$16,000,000
Increase DMV service fees	4,100,000
Increase SCC road tax administration fees	1,400,000
Increase liquidated damage rates	3,300,000
Increase gross vehicle weight limit	2,000,000
Total	$26,800,000

Table 15
PROJECTED SAVINGS THROUGH INCREASED EFFICIENCY
(1982-84)

Action	Projected Savings
Productivity improvements through better management of field maintenance	$10 million
Reductions in purchase of equipment	2 million
Elimination of weekly preventive maintenance shut-downs	2 million
Restructuring inmate work crews	2 million
Total	$16 million

Implications of the Funding Options. Tables 16 through 19 show that the General Assembly can fund widely varying construction programs by phasing in adjustments to existing fees, in conjunction with one of four options for increasing the motor fuel tax. The motor fuel tax remains the most practical means of raising large amounts of new revenue. The motor fuel tax has the combined advantage of being use-related and applicable to both Virginia residents and out-of-state travellers. The other primary revenue source, the vehicle sales and use tax, generally applies only to Virginia residents and is not a good measure of relative use of the highway system.

To maintain taxing equity, truck registration fees and the road tax surcharge are used. These user charges can be targeted to specific truck classes, in order to increase their revenue payments in proportion to their cost responsibility. The road tax applies to three-

axle single unit trucks and tractor-trailers. Two-axle single unit trucks (Class III) are exempt from the road tax and their large numbers makes it administratively impractical to extend the necessary registration and audit coverage for application of the surcharge. Therefore, using a weight-graduated registration fee is the most practical means of addressing the need to increase payments from Class II and Class III vehicles.

Those single unit trucks between 10,001 and 50,000 pounds may presently register as either a private or for-hire carrier. A separate registration fee is charged for each type of carrier. Adjusting weight graduated fees could help eliminate the inequity in Class II and Class III trucks. For example, a truck now registered at 19,500 pounds pays either $2.60 or $4.15 per 1000 pounds depending on whether it is a private or for-hire carrier, respectively. An increased registration of $7.05 per 1000 pounds would generate an additional $591,000 annually from trucks in this weight group. The cululative effect for all weight classes, based on adjusted fees as shown in Table 20, could generate the $20.8 million needed to improve the equity relationships of two-axle and three-axle, single unit trucks. An analysis of several proposals which are based on a unified registration schedule and increased fees appear in the JLARC report "Highway Financing in Virginia."

In considering changes in the current 11 cents-per-gallon tax on motor fuel, the General Assembly may wish to consider alternative means of applying the tax. Three alternatives, as well as a cents-per-gallon increase, are shown in Tables 16 through 19.

Cents-per-Gallon. The cents-per-gallon tax has the advantage of being predictable in terms of projecting the amount of revenue to be generated. Computer models are capable of projecting motor fuel consumption with good accuracy, even under the recent changes in travel patterns resulting from high prices. The cents-per-gallon increase, therefore, gives the General Assembly maximum control over highway and transportation revenue generation.

The cents-per-gallon approach has the disadvantage of being insensitive to inflation. Continuing a cents-per-gallon tax would require periodic legislative adjustments to the tax rate.

Retail Sales Tax. Virginia currently exempts motor fuel from the retail sales tax, with the exception of the Northern Virginia tax levy for metro funding. Eight states currently apply a sales tax on motor fuel in addition to a fixed cents-per-gallon base. The sales tax as a percentage of sales price has the advantage of being more sensitive to cost inflation than the fixed cents-per-gallon tax. In the past, motor fuel prices and the highway construction and maintenance inflation indices have correlated well over time. A sales tax on motor fuel would therefore offer some protec-

Table 20
ADJUSTED TRUCK REGISTRATION SCHEDULE

GROSS WEIGHT GROUPS (POUNDS)	FEE PER THOUSAND POUNDS OF GROSS WEIGHT (ALL VEHICLES)
6,501 - 10,000	Flat Fee $22
10,001 - 11,000	$ 4.75
11,001 - 12,000	$ 4.90
12,001 - 13,000	$ 5.15
13,001 - 14,000	$ 5.40
14,001 - 15,000	$ 5.65
15,001 - 16,000	$ 5.90
16,001 - 17,000	$ 6.15
17,001 - 18,000	$ 6.40
18,001 - 19,000	$ 6.75
19,001 - 20,000	$ 7.05
20,001 - 21,000	$ 7.20
21,001 - 22,000	$ 7.50
22,001 - 23,000	$ 7.70
23,001 - 24,000	$ 8.00
24,001 - 25,000	$ 8.30
25,001 - 26,000	$ 8.60
26,001 - 27,000	$ 8.90
27,001 - 28,000	$ 9.20
28,001 - 29,000	$ 9.50
29,001 - 40,000	$ 9.80
40,001 - 45,000	$ 9.90
45,001 - 50,000	$10.30
50,001 - 55,000	$10.50
55,001 - 80,000	$11.00

Plus $3.60 administrative adjustment for each vehicle.

tion from the inflationary erosion of purchasing power which has characterized the highway trust fund since 1977.

The retail sales tax on motor fuels has the disadvantage of being less predictable in the amount of revenue generated. It is significant that the U.S. Department of Energy recently suspended long-term forecasting of gasoline prices due to the volatility of price increases and uncertainty about OPEC policy. Using a sales tax would weaken legislative control over revenue generation and would require increased attention to the appropriations process to ensure that the highway and transportation program scope remains consistent with legislative intent.

Oil Franchise (Wholesale Percentage) Tax. Pennsylvania recently enacted a 3.5 percent "oil franchise" tax on oil companies operating in that commonwealth. The oil franchise tax is applied to revenues generated at the "first sale" of petroleum products for marketing and distribution to a direct user. Provision is made for non-armslength transactions between subsidiary entities. As generally applied, the oil franchise tax is equivalent for revenue generation purposes to an indirect percentage tax on the wholesale price of motor fuel added on to a fixed cents-per-gallon levy.

There has been some misunderstanding about the implications of the oil franchise tax for the consumer. The tax is a cost of doing business under IRS rules and is deductible by the oil companies. However, except in the unlikely event that the deduction would lower the applicable tax rate, there is no advantage gained by the oil companies in having the additional deduction. The full amount of the tax has been passed on to consumers in Pennsylvania following enactment of the oil franchise tax. The same result should be expected in Virginia if a similar tax were enacted. Thus, by using an oil francise tax the legislature relinquishes direct taxing authority to the extent the tax is passed on to consumers at the pump by oil companies.

Full Conversion to a Percentage. Six states have adopted a percentage tax for their total motor fuel tax collection mechanism. That is, they do not use any form of a fixed cents-per-gallon tax. The percentage tax as the sole means of tax collection suffers from a major disadvantage. As Tables 16-19 show, the tax rate is very volatile, due to instability in fuel prices. In Tables 18 and 19 the tax rate must actually be decreased in future years because fuel prices are expected to increase at a faster rate than revenue requirements. However, if prices stabilize for even a relatively short time period, revenue would fall short of requirements. A full conversion to a percentage tax on motor fuel, particularly in a period of large price fluctuations, would make revenue projection and budgeting for highway and transportation programs difficult and unreliable.

Summary

The funding alternatives are based on a range of construction program funding from a minimum budget through the preliminary "critical improvements" identified by DHT. A combination of fee-for-service adjustments, vehicle licensing increases to cover administrative costs, and revenues generated from improved truck weight enforcement can provide a substantial base of new revenue. Increases in the road tax surcharge and in weight-graduated registration fees can be used to maintain taxing equity and to provide some additional revenue. Efficiency improvements can also free funds for other purposes. However, for all but the minimum budget option for 1982-84, and in all cases for 1984-86, additional revenues are needed.

Recommendation (50). In view of the revenue situation, the General Assembly should amend the 1982-84 Appropriations Act to prohibit the Department of Highways and Transportation from spending in excess of amounts appropriated except under the most severe circumstances, and then only with the personal authorization of the Governor. All such added spending actions should be submitted to the General Assembly for deficit authorization action at the first succeeding session.

Table 16a

SUGGESTED FINANCING ALTERNATIVES FOR OPTION I MINIMUM CONSTRUCTION BUDGET

New Funds Required: NONE (FY 1983), $51 million (FY 1984), $211 million (1984-86)

LEGISLATIVE ACTIONS	New Revenues (millions) FY 1983	FY 1984	1984-86
1. Reduce DHT request for maintenance and administration by $8 million annually, to provide an incentive for productivity improvements.	$ 8.0	$ 8.0	$ –
2. Effective July 1, 1983, increase DMV and SCC fees-for-service, to cover service costs.	–	5.5	11.0
3. Also effective July 1, 1983, increase vehicle licensing fees to cover collection costs.	–	16.0	32.0
4. Also effective July 1, 1983, increase the maximum gross registered weight to 80,000 pounds.	–	2.0	4.0
5. Also effective July 1, 1982, increase liquidated damage charges to 4 cents and 10 cents per pound overweight.	3.3	3.3	6.6
6. Also effective July 1, 1983, increase weight-graduated truck registration fees to meet equity requirements.	–	10.4	20.8
7. Also effective July 1, 1984, increase the road tax surcharge from 2 to 3 cents per gallon.	–	–	8.5
(and increase motor fuel taxes by:)			
8. Scheduling a 2.6 cents per gallon increase on motor fuel taxes on July 1, 1984.	–	–	129.8
(or)			
Keeping an 11 cents per gallon base and adding a 1.25% retail sales tax to motor fuel on July 1, 1984.	–	–	140.0
(or)			
Keeping an 11 cents per gallon base and adding a 1.3% "oil franchise" tax to the average wholesale price of motor fuel on July 1, 1984.	–	–	128.1
(or)			
Eliminating the 11 cents per gallon base and converting to a 6.9% tax on the average wholesale price of motor fuel on July 1, 1984.	–	–	131.1
Total Revenue Range (depending on motor fuel tax option selected)	$11.3*	$45.2	$211.0 To $222.9

*Would be surplus to program requirements and could be used in FY 1984.

FINANCING A MINIMUM CONSTRUCTION BUDGET (OPTION I)

Option I is a minimum construction program which matches all available federal funds within the requirements of statutory allocation formulas. This program would have 49 percent of the purchasing power of 1978-80 construction spending. An additional $51 million in State revenues would be needed in 1982-84 and $211 million in 1984-86 to fund Option I.

Table 16a Table 16a outlines a set of possible actions which would fund Option I, consistent with the findings of the cost responsibility study. Efficiency savings and revenues from increased liquidated damage rates would be available in FY 1983. Additional fee-for-service adjustments would take effect in FY 1984. An increase in the State's motor fuel tax could be postponed until July 1, 1984.

Table 16b Table 16b shows the additional revenue needs to be produced through user charges from each vehicle class to be consistent with the findings of the cost responsibility study. The analysis for Option I differs from the following tables in that the existing overpayment for Class I vehicles cannot be totally eliminated without exceeding program funding requirements. The net effect is an unavoidable $5.5 million surplus which would be available for current spending or retention.

Table 16c Table 16c shows the overpayment and underpayment as a percent of cost responsibility. The equity relationship shows a 2.2 percent overpayment by Class I vehicles. This is an improvement over the current 3.2 percent overpayment for Class I.

Table 16b

ADDITIONAL REVENUE FROM EACH VEHICLE CLASS (1982-84)

	I	II	III	IV	Total
Additional revenue required	$ –	$12.4	$ 9.4	$ 3.0	$24.8
Increase registration fees for medium weight trucks	–	6.8	3.5	–	10.3
Extend gross weight limits to 80,000 pounds	–	–	–	2.0	2.0
Overpayment/Underpayment	+$18.0*	-$5.6	-$5.9	-$1.0	+$5.5

*Overpayment from Class I is a result of existing overpayment.

Table 16c

USER CHARGE EQUITY (1982-84)

	I	II	III	IV
Proportional Cost Responsibility	68.6%	9.1%	5.1%	17.2%
Revenue contribution, with additional revenues	70.8%	8.1%	4.2%	16.9%
% over/under	+2.2%	-1.0%	- .9%	- .3%

Table 17a

SUGGESTED FINANCING ALTERNATIVES FOR OPTION II
JLARC HIGH PRIORITY CONSTRUCTION BUDGET

New Funds Required: $41 million (FY 1983), $104 million (FY 1984), $347 million (1984-86)

LEGISLATIVE ACTIONS	Revenue Produced (millions) FY 1983	FY 1984	1984-86
1. Reduce DHT request for maintenance and administration by $8 million annually, to provide an incentive for productivity improvements.	$ 8.0	$ 8.0	$ —
2. Effective July 1, 1982, increase DMV and SCC fees-for-services, to cover costs.	5.5	5.5	11.0
3. Also effective July 1, 1982, increase vehicle licensing fees to cover collection costs.	16.0	16.0	32.0
4. Also effective July 1, 1982, increase the maximum gross registered weight to 80,000 pounds.	2.0	2.0	4.0
5. Also effective July 1, 1982, increase liquidated damage charges to 4 cents and 10 cents per pound overweight.	3.3	3.3	6.6
6. Also effective July 1, 1982, increase weight - graduated truck registration fees to meet equity requirements.	10.4	10.4	20.8
7. Also effective July 1, 1984, increase the road tax surcharge from 2 to 4 cents per gallon.	—	—	17.0
(and increase motor fuel taxes by:)			
8. Scheduling a 2.4 cents per gallon increase on motor fuel taxes on July 1, 1983, and a subsequent 2.8 cents increase on July 1, 1984.	—	59.7	259.5
(or)			
Keeping an 11 cents per gallon base and adding a 1.25% retail sales tax to motor fuel on July 1, 1983 and a subsequent 1.0% increase on July 1, 1984.	—	62.1	252.0
(or)			
Keeping an 11 cents per gallon base and adding a 1.4% "oil franchise" tax to the average wholesale price of motor fuel on July 1, 1983 and a subsequent 1.2% on July 1, 1984.	—	61.2	256.3
(or)			
Eliminating the 11 cents per gallon base and converting to a 7.6% tax on the average wholesale price of motor fuel on July 1, 1983, and add a subsequent .6% on July 1, 1984.	—	59.0	259.3
	$45.2	$104.2	$343.4
Total Revenue Range (depending on motor fuel tax option selected)		To $107.3	To $350.9

FINANCING A HIGH PRIORITY CONSTRUCTION BUDGET (OPTION II)

Option II is a construction program based on the JLARC analysis of high priority construction needs described previously. This program option would have 59 percent of the purchasing power of FY 1978-80 construction spending. An additional $41 million in State funds would be needed for FY 1983, and $104 million for FY 1984. Funding the program for FY 1984-86 would require an additional $347 million.

Table 17a Table 17a outlines a set of possible actions which would fund Option II, consistent with cost responsibility findings. Fee-for-service adjustments would need to take effect on July 1, 1982, and an increase in the motor fuel tax would be necessary for FY 1984. The four options for increasing the motor fuel tax are shown separately. An increase in the road tax surcharge would also be required for FY 1984-86.

Table 17b Table 17b shows that $79.4 million in additional revenue from user charges would be needed in FY 1982-84. The set of actions outlined in Table 17a would produce revenues from each class generally consistent with their cost responsibility. Class III trucks would underpay by $3.2 million.

Table 17c Table 17c shows the overpayment and underpayment as a percent of cost responsibility. No class would be over or underpaying its cost responsibility by more than one-half of one percent.

Table 17b

ADDITIONAL REVENUE FROM EACH VEHICLE CLASS (1982-84)

	I	II	III	IV	Total
Additional revenue required	$38.7	$17.7	$12.0	$11.0	$79.4
Increase registration fees for medium weight trucks	–	13.7	7.0	–	20.7
Extend gross weight limits to 80,000 pounds	–	–	–	4.0	4.0
Increase motor fuel taxes	41.8	4.4	1.8	7.5	55.5
Overpayment/Underpayment	+$3.1	+$ .4	-$3.2	+$ .5	+$ .8

Table 17c

USER CHARGE EQUITY (1982-84)

	I	II	III	IV
Proportional Cost Responsibility	69.5%	8.9%	5.0%	16.6%
Revenue contribution, with additional revenues	69.9%	8.9%	4.5%	16.7%
% over/under	+ .4%	–	- .5%	+ .1%

Table 18a

SUGGESTED FINANCING ALTERNATIVES FOR OPTION III
JLARC HIGH PRIORITY PLUS SUPPLEMENTATION CONSTRUCTION BUDGET

New Funds Required: $69 million (FY 1983), $134 million (FY 1984), $415 million (1984-86)

LEGISLATIVE ACTIONS	Revenue Produced (millions) FY 1983	FY 1984	1984-86
1. Reduce DHT request for maintenance and administration by $8 million annually, to provide an incentive for productivity improvements.	$ 8.0	$ 8.0	$ —
2. Effective July 1, 1982, increase DMV and SCC fees-for-service, to cover service costs.	5.5	5.5	11.0
3. Also effective July 1, 1982, increase vehicle licensing fees to cover collection costs.	16.0	16.0	32.0
4. Also effective July 1, 1982, increase the maximum gross registered weight to 80,000 pounds.	2.0	2.0	4.0
5. Also effective July 1, 1982, increase liquidated damage charges to 4 cents and 10 cents per pound overweight.	3.3	3.3	6.6
6. Also effective July 1, 1982, increase weight - graduated truck registration fees to meet equity requirements.	10.4	10.4	20.8
7. Also effective July 1, 1982, increase the road tax surcharge from 2 to 4 cents per gallon and from 3 cents to 4 cents effective July 1, 1984.	4.3	4.3	17.0
(and increase motor fuel taxes by:)			
8. Scheduling a 2.1 cents per gallon increase on motor fuel taxes on July 1, 1982, and a subsequent 4.4 cents increase on July 1, 1984.	53.7	52.2	324.4
(or)			
Keeping an 11 cents per gallon base and adding a 1.25% retail sales tax to motor fuel on July 1, 1982, and a subsequent 1.75% increase on July 1, 1984.	48.6	62.1	336.0
(or)			
Keeping an 11 cents per gallon base and adding a 1.5% "oil franchise" tax to the average wholesale price of motor fuel on July 1, 1982, and a subsequent 1.8% on July 1, 1984.	49.1	65.6	325.3
(or)			
Eliminating the 11 cents per gallon base and converting to a 9.2% tax on the average wholesale price of motor fuel on July 1, 1982, reduce to 8.2% on July 1, 1983, and increase to 8.9% on July 1, 1984.	19.9	85.2	328.3
Total Revenue Range (depending on motor fuel tax option selected)	$ 69.4 To $103.2	$101.7 To $134.7	$415.8 To $427.4

FINANCING A SUPPLEMENTED HIGH PRIORITY CONSTRUCTION BUDGET (OPTION III)

Option III is a construction program which includes the high priority construction needs in Option II, plus a $58 million supplement in FY 1982-84 and $68 million in FY 1984-86. This supplement would be necessary to fund the high priority projects included in Option II and also comply with the statutory allocation formulas. Without this supplement some projects on the high priority list would be blocked by the allocation requirements in existing laws. Option III would be a construction program at 64 percent of the purchasing power of the 1978-80 program. Additional State revenues of $69 million in FY 1983, $134 million in FY 1984 and $415 million in FY 1984-86 would be required.

Table 18a Table 18a outlines a set of possible actions which would provide sufficient revenue to fund Option III, consistent with vehicle cost responsibility. Fee-for-service adjustments would take effect on July 1, 1982. Increases in the motor fuel tax and the road tax surcharge would also be needed at that time.

Table 18b Table 18b shows that $137.4 million would be needed from user charges in FY 1982-84. Class II and Class III trucks would underpay slightly, while the other two classes would overpay by $1.9 and $2.6 million respectively.

Table 18c Table 18c shows the overpayments and underpayments as percentages of cost responsibility. All classes would be within one-third of one percent of their required revenue contribution.

Table 18b

ADDITIONAL REVENUE FROM EACH VEHICLE CLASS (1982-84)

	I	II	III	IV	Total
Additional revenue required	$77.9	$22.5	$14.5	$22.5	$137.4
Increase registration fees for medium weight trucks	–	13.7	7.0	–	20.7
Extend gross weight limits to 80,000 pounds	–	–	–	4.0	4.0
Increase road tax, user charge from 2 to 3 cents/gallon	–	–	1.7	6.8	8.5
Increase motor fuel taxes	79.8	8.3	3.5	14.3	105.9
Overpayment/Underpayment	+$1.9	-$ .5	-$2.3	+$2.6	+$1.7

Table 18c

USER CHARGE EQUITY (1982-84)

	I	II	III	IV
Proportional Cost Responsibility	69.4%	8.8%	4.9%	16.8%
Revenue contribution with additional revenues	69.5%	8.7%	4.6%	17.1%
% over/under	+.1%	-.1%	-.3%	+.3%

Table 19a

SUGGESTED FINANCING ALTERNATIVES FOR OPTION IV
DHT CRITICAL IMPROVEMENTS CONSTRUCTION BUDGET

New Funds Required: $184 million (FY 1983), $233 million (FY 1984), $549 million (1984-86)

LEGISLATIVE ACTIONS	Revenue Generated (millions) FY 1983	FY 1984	1984-86
1. Reduce DHT request for maintenance and administration by $8 million annually, to provide an incentive for productivity improvements.	$ 8.0	$ 8.0	-
2. Effective July 1, 1982, increase DMV and SCC fees-for-service, to cover service costs.	5.5	5.5	11.0
3. Also effective July 1, 1982, increase vehicle licensing fees to cover collection costs.	16.0	16.0	32.0
4. Also effective July 1, 1982, increase the maximum gross registered weight to 80,000 pounds.	2.0	2.0	4.0
5. Also effective July 1, 1982, increase liquidated damage charges to 4 cents and 10 cents per pound overweight.	3.3	3.3	6.6
6. Also effective July 1, 1982, increase weight-graduated truck registration fees to meet equity requirements.	10.4	10.4	20.8
7. Also effective July 1, 1982, increase the road tax surcharge from 2 to 4 cents per gallon, and from 4 cents to 5 cents on July 1, 1984.	8.5	8.5	25.5
(and increase motor fuel taxes by:)			
8. Scheduling a 6.2 cents per gallon increase on motor fuel taxes on July 1, 1982, and a subsequent 2.8 cents increase on July 1, 1984.	158.5	154.1	449.2
(or)			
Keeping an 11 cents per gallon base and adding a 3.5% retail sales tax to motor fuel on July 1, 1982 and a subsequent .75% increase on July 1, 1984.	136.0	174.0	476.0
(or)			
Keeping an 11 cents per gallon base and adding a 4.1% "oil franchise" tax to the average wholesale price of motor fuel on July 1, 1982 and a subsequent .5% on July 1, 1984	134.2	179.3	453.4
(or)			
Eliminating the 11 cents per gallon base and converting to a 12.6% tax on the average wholesale price of motor fuel on July 1, 1982, reduce to 10.4% on July 1, 1983, and reduce to 10.3% on July 1, 1984.	131.1	181.4	466.3
Total Revenue Range (depending on motor fuel tax option selected)	$184.8 To $212.2	$207.8 To $235.1	$549.1 To $575.9

FINANCING THE DHT CRITICAL IMPROVEMENTS BUDGET (OPTION IV)

Option IV is based on a preliminary critical improvements program prepared by DHT for discussion in the 1982 session of the General Assembly. This budget would be equivalent to 81 percent of the purchasing power of FY 1978-80 spending. An additional $184 million in FY 1983, $233 million in FY 1984 and $549 million in FY 1984-86 would be required from State tax sources.

Table 19a Table 19a outlines a set of possible actions to fund the DHT proposed budget. Increases in all revenue sources would be required, effective July 1, 1982.

Table 19b Table 19b shows that $351.4 million in additional user charges would be needed in FY 1982-84. Classes II and III would underpay slightly; Classes I and IV would overpay by a combined total of $5.9 million.

Table 19c Table 19c shows overpayments and underpayments by vehicle class, expressed as a percentage of cost responsibility.

Table 19b

ADDITIONAL REVENUE FROM EACH VEHICLE CLASS (1982-84)

	I	II	III	IV	Total
Additional revenue required	$233.1	$38.9	$23.1	$56.3	$351.4
Increase registration fees for medium weight trucks	–	13.7	7.0	–	20.7
Extend gross weight limits to 80,000 pounds		–	–	4.0	4.0
Increase road tax surcharge from 2 to 4 cents/ gallon	–	–	3.4	13.6	17.0
Increase motor fuel taxes	235.6	24.6	10.3	42.1	312.6
Overpayment/Underpayment	+$2.5	-$ .6	-$2.4	+$3.4	+$ 2.9

Table 19c

USER CHARGE EQUITY (1982-84)

	I	II	III	IV
Proportional Cost Responsibility	70.1%	8.6%	4.7%	16.6%
Revenue contribution, with additional revenues	70.1%	8.5%	4.5%	16.9%
% over/under	–	- .1%	- .2%	+ .3%

COMMONWEALTH of VIRGINIA
DEPARTMENT OF HIGHWAYS & TRANSPORTATION
1221 EAST BROAD STREET
RICHMOND, 23219

December 15, 1981

Honorable Theodore V. Morrison, Jr.
Chairman, Joint Legislative Audit and
Review Commission
910 Capitol Street
Richmond, VA 23219

Dear Mr. Morrison:

The Virginia Department of Highways and Transportation has carefully reviewed results of the JLARC draft report concerning organization and management. Please find attached for your review a formal response by specific JLARC recommendation.

The JLARC staff has prepared a comprehensive analysis of organization and management of VDH&T, and I believe they will confirm that we here in the Department have been cooperative and open in helping them to identify areas which need strengthening. This is not to say that we agree with every recommendation contained in the report but certainly the majority of those made.

There are three major issues, although, that I would like to highlight; first, the overexpenditure of the maintenance program in fiscal years 1979-80. As you know these particular years include a large amount of extraordinary storm damage expenditure. It is our position that the expenditure for repair of storm damage was of an extreme emergency nature that required immediate attention and clearly should be classified as construction rather than maintenance. We did, however, record these expenditures in our maintenance cost accounting system due to the more extensive reporting system available to control costs. With this understanding, VDH&T acquired authorization to overexpend the total appropriation for construction and maintenance in FY 1979 and specifically to overexpend maintenance in FY 1980. These approvals were received, and the appropriate supporting documentation is available. The unusual circumstance and emergency nature of extraordinary storm damage could not possibly have been foreseen during budget preparation.

The second clarification I would like to make concerns the balance of allocations versus expenditures. Although this is a very difficult and complex area, some points need to be made for the sake of clarification. We take no exception to the statement that an emphasis in terms of expenditure has been placed on programs other than the urban system, primarily the

Interstate system. However, our reasons for doing so still remain valid. During 1978 approximately $70 million of additional federal aid was acquired through the federal aid discretionary process. In order to receive that federal aid, these funds had to be immediately obligated, and monies had to be available to match the available federal dollars. Further the extraordinary storm damage incurred left less actual cash available for all construction programs. This discretionary Interstate federal aid coupled with the extraordinary storm damage incurred in past years and the complexity of getting urban construction under way has temporarily resulted in an unusually high urban balance. What should not be indicated, however, is that the allocations to the urban program have been transferred to other programs and that the urban balance cannot be brought to a reasonable level. VDH&T has prepared a plan for correcting the urban imbalances.

The last issue of major importance is the projection of revenue and expenditures in future years by JLARC staff. Our major concern in this area is the fact that JLARC has chosen to consider access road construction, revenue sharing, coal severance, capital outlay, and some other related items to be state money available to match federal aid. Despite the fact that past appropriations indicate these funds are not available to match federal aid, JLARC has chosen to consider these state cash expenditures to be zero and thereby have projected more state cash available to match federal aid than we feel is appropriate.

As I indicated before, we feel the JLARC study has been most beneficial to the Department and that there has been good cooperation. VDH&T is prepared to aggressively implement many of the recommendations made and in fact has proceeded with many previous recommendations.

I will be available to discuss any of these issues in detail.

Sincerely,

Harold C. King, Commissioner

Attachment

VDHT's Responses to JLARC's Recommendations

Recommendation (1): The Highway and Transportation Commission should give greater attention to the biennial maintenance program.

Recommendation (5): DHT staff should develop an annual maintenance program to provide the necessary level of accountability for spending. The program should identify a (1) "minimum funding level necessary for maintenance which constitutes a program to protect the highway investment and provide for reasonable levels of safety and comfort to the travelling public." The plan should also identify (2) "other spending levels above the minimum program which are recommended to provide for desirable levels of comfort, convenience and other maintenance enhancements."

VDHT Response: VDHT concurs with the Report's emphasis on providing attention to the biennial maintenance program. The Department is acutely aware of the needs shift from construction to maintenance planning and is establishing a Commission Maintenance Committee to define the concept of maintenance and review the proposed maintenance plan. Included in this review will be a determination of the amount of funds to be allocated to the maintenance activity.

The recommendations also call for alternative maintenance level programs to be submitted to the General Assembly for review. Strict acceptance of this portion of the recommendation would result in the General Assembly being involved in Department operational decisions. It is felt the interaction between the appropriate legislative committees and the Commission Maintenance Committee will satisfy the intent of keeping the General Assembly informed and provide opportunity for its input while minimizing the amount of detail. This, it is felt, is more in keeping with the General Assembly's overview function.

Recommendation (2): The Commission should establish a standing committee on public transportation.

VDHT Response: A Commission Committee for Public Transportation will be created and charged with providing guidance and oversight in the continued progress of this function within VDHT.

Recommendation (3): The Secretary of Transportation should expedite the exposure of the statewide transportation plan.

VDHT Response: The draft of a statewide plan is expected to be completed by July 1, 1982. This draft will discuss the major transportation issues facing Virginia and will be the basis for input from Commission members, local officials, and regional and local planning agencies.

Recommendation (4): DHT should improve its construction needs assessment process by taking the following actions:

a. All future needs assessments done by the department should reflect the immediacy of the funding requirement in terms of when each project can realistically advance to construction.

b. An analytic framework should be developed for prioritizing highway construction needs and presenting several levels of spending as alternatives in the biennial budget.

c. DHT should expedite the completion of a highway improvement program which identified high priority spending objectives for construction during the subsequent four to six year period.

d. The Highway and Transportation Commission should formally review and approve the highway improvement program as well as annual updates and keep aprised of progress made by the department in meeting program objectives.

VDHT Response: VDHT concurs with the recommendation and is developing a Six-Year Critical Improvement Program to specifically identify the highest priority needs. This Program will include the utilization of the existing allocation formula to insure equitable distribution to localities.

Recommendation (6): DHT should re-evaluate its policies regarding the work-load standards used in budgeting for routine maintenance.

VDHT Response: VDHT recognizes that, for any specific activity, substantial fluctuations are possible due to local conditions; however, overall, the standards are useful for "average cost" planning and fund distribution. It is further recognized that some of these standards may be inaccurate due to technological advancement, new equipment, and methods improvements. An ongoing program is being developed to evaluate the effect of such changes and modifications to standards will be made, as appropriate.

Recommendation (7): DHT should place a high priority on full implementation of a pavement management system for Virginia.

VDHT Response: The recommended pavement management system is currently being developed for the Interstate System. The Department's position on this program is that if the program proves to be cost beneficial for the Interstate System it will be expanded to the other systems.

Recommendation (8): Greater attention should be given to the bridge condition rating system.

VDHT Response: Increased efforts will be directed towards providing a more uniform methodology of performing bridge rating. The output from this program will be taken into account in determining statewide priorities for bridge maintenance and replacement.

Recommendation (9): The public transportation engineer should take the lead in developing uniform financial and operating report formats which provide comparable information on all transit systems.

VDHT Response: Current Public Transportation Division activities relating to uniform transit financial and operating report formats, efficiency reviews, and needs assessments are consistent with General Assembly direction provided in Section 33.1-391. JLARC recommendations regarding a biennial report on transit needs and improved uniform transit financial and operating report formats can be implemented.

In regard to transit efficiency and effectiveness review, PTD currently performs such reviews for existing state capital, administrative, and experimental programs. Recommendations regarding additional transit efficiency and effectiveness reviews could be implemented, assuming a change in current state philosophy and provision of necessary resources.

Should the General Assembly mandate transit operating assistance, efficiency and effectiveness reviews would be appropriate to safeguard state fund investments in local transit operations.

Recommendation (13): For the purpose of addressing the current imbalance between allocations and expenditures among highway systems, the General Assembly may wish to:

a. Require DHT to prepare a plan for General Assembly consideration that will eliminate the existing imbalances within the statutory provisions.

b. Suspend the application of code of Virginia Section 33.1-23.1 for a time period sufficient to allow DHT to address the current imbalances.

c. Require specific consistency between expenditures and allocations made in the future but permit greater flexibility in the extent to which past allocations vary from statutory allocation provisions.

VDHT Response: In response to (13a), a plan is being developed to correct the current imbalances among highway systems, and further development of the Critical Improvement Program mentioned earlier will support this objective. The imbalance originally occurred as a result of efforts to capture available Federal Interstate Funding coupled with extraordinary storm damage incurred in past years. It is not unusual for the Urban balance to lag due to the high cost of projects, complexity of construction, utility adjustments, and need for consensus from local governing bodies.

VDHT's Responses to JLARC's Recommendations

Recommendation (14): DHT should improve control and coordination over capital outlays by consolidating the capital budget function with the office responsible for preparation of the operating budget.

Recommendation (15): The department should comply with the capital outlay policies and procedures specified in the Appropriations Act.

VDHT Response: A proposed procedure has been sent to the Secretary of Transportation incorporating the points outlined in Recommendation (15). In that this will provide the necessary controls and it can be easily coordinated with the Budget Division, VDHT sees no need to relocate the administration of this function from the Purchasing Division.

Recommendation (16): The General Assembly may wish to amend statute to establish a deputy commissioner position distinct from the chief engineer position.

VDHT Response: While there is agreement that some organizational changes are desirable, it is not felt at this time of retrenchment and austerity that another top level position should be created. In the Department's opinion, it is not unusual to have the Administration and Finance functions reporting to the Chief Executive Officer.

Recommendation (17): The General Assembly should create a directorate for public transportation.

VDHT Response: Currently, the Public Transportation Division reports to the Commissioner albeit routine administrative matters are handled through the Director of Planning. This, it is felt, satisfies the intent of the existing legislation. As mentioned earlier, a Commission Committee will be created to provide guidance and oversight to this function.

Recommendation (18): DHT should establish an internal audit unit which reports to the highway commissioner.

VDHT Response: The current reporting relationship of the internal audit function is to the Commission Internal Audit Committee. All Internal Audit and Management Study Reports will be reported to the Commission Committee. The State Internal Auditor has been requested to review and assess the VDHT internal audit function and suggest areas he feels may be improved.

Recommendation (19): The management services division should develop a systematic means of conducting value engineering, methods improvement and applied engineering research as a means of reducing costs.

VDHT Response: The Management Services Division is currently developing a work program to include, as a minimum, those items mentioned in the recommendation. Increased involvement and cooperation with the staff of the Highway Transportation Research Council is a part of this program.

Recommendation (20): DHT should combine all construction programming into a single division for program management.

VDHT Response: The Department cannot support the merger of the Urban, Secondary Roads, and Programming and Scheduling Divisions due to the increased coordination with local governments anticipated with the program emphasis areas. Substantial staff reductions have been made in each of the three divisions; however, the visibility of the units within the Department is critical to the local governments.

Recommendation (21): The environmental division should be assigned to the engineering directorate.

VDHT Response: The Department concurs with this recommendation.

Recommendation (22): The Highway and Transportation Commission should review boundaries of the eight construction districts and make adjustments where necessary.

VDHT Response: Consideration will be given to a realignment of the eight Construction Districts; and certainly, the factors enumerated in the recommendation would be part of this consideration; however, further study is needed since there is a potentially large capital outlay requirement attached to such a change.

Recommendation (23): DHT should consider increasing the mileage served by an area headquarters and corresponding reductions in the number of area headquarters and related timekeeper and area supervisor positions.

VDHT Response: The Department is in the process of reviewing these units; and where it is cost justifiable, reductions will be made.

Recommendation (24): DHT should re-examine its approach to defining the roles and responsibilities of various organizational units.

VDHT's Responses to JLARC's Recommendations

Recommendation (25): Central office policies, standards and guidelines should be developed and promulgated with clear understanding as to whether they are advisory or mandatory.

Recommendation (26): The use of staff meetings to disseminate information should be improved by timing them to occur prior to public announcement of major department actions.

Recommendation (27): Representation on committees of resident engineers and field staff from regions outside the Richmond area should be increased.

VDHT Response: The Department concurs with recommendations 24-27; and efforts are underway to improve communications, satisfy informational needs, clarify policies, standards, and guidelines, and increase the level of involvement of field personnel.

Recommendation (28): DHT should work with the Secretary of Transportation to clarify the reporting relationship between the rail division and the secretary.

VDHT Response: The dual reporting relationship of the Rail Transportation Division has worked well; however, it will be clarified. The additional functions identified by JLARC have been historically performed by the Division as a part of the state rail planning process.

Recommendation (29): The process of developing guidelines for identifying surplus positions should be expedited.

Recommendation (30): Because it is important to retain qualified personnel, the department should consider alternatives to full-time employment of surplus staff.

Recommendation (31): The training section and the district trainers should survey the organization to determine priority areas where skills improvements are needed.

VDHT Response: Action has already been taken to develop a more uniform method of evaluating required staffing levels which the Department views as a critical portion of the development of an overall mangement system. Efforts will be made to provide additional training both to VDHT managers and in areas where skills improvement are or will be required.

Recommendation (32): DHT should establish monthly preventive maintenance program as department policy.

VDHT Response: Since this was initially pointed out by JLARC, policy and guideline changes have been made; and efforts are continuing in this area to improve the clarity of these instructions and insure uniform interpretation.

VDHT's Responses to JLARC's Recommendations

Recommendation (33): DHT should improve on the existing equipment information system by developing lifetime cost profiles for each age group of all major equipment classes.

VDHT Response: This recommendation is being considered. The Department has recently established a more realistic method of determining equipment utilization which provides more timely data and will improve utilization statewide. Additionally, efforts are being made to develop reports which will indicate equipment with high parts and labor costs and excessive fuel consumption.

Recommendation (34a): DHT should establish desirable inventory levels for all classes of general supplies.

Recommendation (34b): DHT should review its policies governing local purchases.

Recommendation (34c): Purchasing agents should review local purchase invoices on a sample basis to (1) determine compliance with DHT policies, and (2) determine whether particular items are purchased frequently enough to justify central purchasing.

Recommendation (34d): The purchasing division should conduct audits of every stockroom annually.

Recommendation (34e): The audit reporting format should be revised to include more specific information on the size and dollar value of errors.

Recommendation (34f): DHT should consider simplifying quarterly inventory corrections by removing the approval requirement before a correction is processed.

Recommendation (34g): The DHT purchasing division should develop a training program for stockroom employees.

Recommendation (34h): The purchasing division should require that all salvage parts be inventoried by the stock clerk and inventory records maintained.

Recommendation (34i): Stockrooms should be considered areas of controlled access as is the case under current policy.

Recommendation (34h): Salvaged road stock should be inventoried and records maintained on the amount and location of salvaged materials.

Recommendation (34j): The equipment division should post information on procedures for issuing gasoline at self-service pumps.

VDHT Response: These recommendations were submitted to VDHT in an Interim Report, and appropriate action to implement these recommendations is in process.

Recommendation (35): The right-of-way division should complete its residue parcel listing and place a higher priority on disposing large or valuable parcels.

VDHT Response: The Department concurs with this recommendation and is investigating ways to most effectively and economically place increased emphasis on this function.

Recommendation (36): DHT should specifically monitor projects for construction engineering costs which are approximately ten percent of the contract price.

VDHT Response: Reports currently exist that provides this information; however, since construction engineering costs are not directly proportional to the size of the projects and short-term future inspector needs must be considered by location, a cost in excess of ten percent does not necessarily indicate improper staffing. The Department recognizes the intent of the recommendation and will strive to comply with the intent.

Recommendation (37): Current dollar limits for approval of work orders by the construction engineer and chief engineer should be retained.

VDHT Response: This limit was recommended by the Hansen Study to be revised to $50,000 to take inflation into account. Management is satisfied that this maintains the desirable relative authority range necessary for a decentralized organization.

Recommendation (38a): DHT and the Department of Corrections should restructure inmate labor crews with the goal of reducing costs.

Recommendation (38b): The General Assembly may wish to consider funding use of inmates on the highways from sources other than the highway maintenance and construction fund.

Recommendation (38c): The Joint Subcommittee on Economic Productivity of the Prison Population and on the Work Release Programs should examine the language and intent of Code of Virginia Section 53-109.1 regarding the reimbursement paid to the Department of Corrections by the Department of Highways and Transportation for inmate labor.

Recommendation (38d): Better training should be provided to DHT employees who supervise or accompany inmates.

VDHT Response: The Department accepts the recommendations relative to inmate labor. The possibility of restructing work crews is being investigated.

The Department, due to revenue decreases, cannot maintain the current level of inmate labor and comply with the statutory requirements for wages. Therefore, it is recommended that legislation be enacted to permit the negotiation of a just wage with the Department of Corrections. The negotiated wage would be subject to approval by the legislature through the budgetary review process. Consideration is being given to utilizing a modification of the DOC training course for guards to increase the ability of VDHT employees in inmate supervision.

Recommendation (47): DHT should expedite the purchase and use of compact portable scales for the mobile weigh units with the intent of eliminating the van and driver now required for transportation of older type scales.

VDHT Response: VDHT is proceeding to acquire additional portable scales; however, to continue the necessary level and quality of coverage, it will be necessary to retain the van units.

Recommendation (48): The Department of State Police and DHT should develop and adopt a policy for offloading that would provide a practical deterrent to overweight operation.

VDHT Response: This recommendation is currently being studied in cooperation with the State Police.

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