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STATE HIGHWAY FINANCE

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In December 1978, the TRB Executive Committee identified the ten most critical issues in transportation. It also created a subcommittee to consider the issue of transportation finance. Several sessions at the 58th and 59th TRB Annual Meeting addressed the experiences of a number of states in resolving their financial problems. The following is a report that was prepared for the Executive Committee that attempts to define the highway finance issue and then reports solutions that were suggested in these Annual Meeting sessions.



THE PROBLEM

A survey of state and local highway officials regarding critical issues facing them would rank the lack of adequate funding as the most pressing problem. This issue is really a combination of issues that has resulted in the current lack of needed revenues to achieve and maintain the desired levels of service. We will confine ourselves to highway issues leaving problems of the other modes and the private sector for future analysis.

The highway finance problems can be divided into the following subissues:

1. Motor fuel consumption decreased in most states in 1979. For the past decade, consumption had been increasing by about 5%/year.
2. Highway construction and maintenance costs have inflated at a substantially more rapid rate than have other sectors of the economy.
3. There has been a maturing of the highway system. The public now is demanding that a high level of service be provided on existing facilities.
4. Local governments, lacking sufficient funds, have gradually shifted responsibility for highway finance to the state and federal governments.

Highway Financing Through User Charges

Highway financing has a long history of relying on user charges to fund highway construction and maintenance. Either by constitution or by statute, 45 states have dedicated such user charges for highway purposes. The two primary user charges are (a) taxes levied on gasoline and special fuels and (b) vehicle license taxes. In order to protect the development of state highway systems from undue political influence and fluctuations that may occur with changes in governors and state legislatures, separate independent highway commissions were created to administer these user-charge revenues. Such commissions generally have been authorized to expend revenues that are received, and by means of overlapping terms, governors and legislatures are prevented from undue control over the commissions. This provides both a stable management and a stable source of funding for a long-term construction program. The provision of federal aid funds also requires national consistency in location, design, and construction standards.

For many years, the combined federal and state user taxes on gasoline, along with state license fees, provided an adequate financial base for upgrading the existing highway systems and for adding new facilities to meet developing congestion problems. When the post-World War II auto boom required new facilities, additional federal funding (still tied to user charges) was provided for the construction of the Interstate highway system.

Improving the Quality not Quantity of Highways

In 1978, there were 791,000 miles of highways under state control, 2,863,000 miles under local control, and 231,000 miles under federal control--a total of 3,885,000 miles. More than 3,000,000 miles of low-grade roads were already in existence when the first state and federal highway agencies were created. While the Interstate and other new highways, freeways, and streets have been added, the major activity of highway agencies has therefore been the upgrading of existing roads and streets.

In the past 10 years, 2 1/2% additional mileage has been added to the state systems and 4 1/2% to the county and urban street systems.

In comparison, there has been substantial improvement in the quality of roads. On the state highway systems, the nonsurfaced road mileage has declined in the past 10 years by 30%; rural and urban low-load-bearing roads have declined by 8%. During the same time, high-load-bearing roads like the Interstate and those on the primary system have increased by 13%.

In a similar fashion, between 1968 and 1978, county and municipal road mileage reflected the increasing shift of population to the suburbs and increased 4%. County and municipal road systems like the state system showed an improvement--nonsurfaced road mileage declined by 22%. Low-load-bearing roads increased by 7%, while high-load-bearing roads increased by a substantial 42% (source: Tables M-1, M-2, Highway Statistics).

Revenues Increase to Meet Construction Program

As a result of an increase in federal and state gasoline taxes in the late 1950s and early 1960s, there was a temporary surplus of highway monies, because the states could not gear up their design and construction programs fast enough. Highway commissions became exceedingly independent from other state activities that were funded out of the general fund. There was little control over the highway program through executive or legislative budget review. In turn, the legislatures were liberal in their interpretation of highway purposes and used highway-user charges to fund related activities such as the state highway patrol.

By 1968, the 4¢/gal federal gasoline tax plus excise taxes on vehicles and automotive parts were providing a major source of funds for the state highway programs. Gasoline and special fuel revenues increased from \$3.2 billion in 1968 to \$4.9 billion in 1978. This was a 10-year increase of 53%, reflecting a 47% increase in gasoline tax receipts and major increase of 131% in diesel fuel tax receipts. More trucks were on the highways (source: FA-4, FE-205, FE-206, Highway Statistics).

However, federal-aid highway apportionments had not followed such a dramatic increase. In 1970, apportionments for highways to the states amounted to \$5.4 billion; in 1980, they were \$6.3 billion -- an increase of 17%. Other federal-aid programs and safety funds added another \$1.5 billion but, clearly, federal-aid highway apportionments had experienced less than a 2%/year growth (source: Table FA-4, FE-205, FE-206, Highway Statistics).

Counties and Cities Share in Highway User Funds

While the states received substantial federal aid construction monies, counties and urban areas depended primarily on property taxes to pay for local highway programs. As service demands outdistanced the local tax base, local government looked to the state for financial assistance. Following the U.S. Supreme Court mandate of "one man, one vote", there were major reapportionments of the seats in state legislatures. Dedicated gasoline taxes were redivided between the state and local governments; a large portion went to the local governments. Today, in many states, as much as half of the state gasoline taxes are set aside for local-government highway projects or are directly paid to the counties and cities. In 1978, state expenditures and grants-in-aid for local roads and streets amounted to \$4.8 billion, an increase in the past 10

years of 92% (source: Table SF-6, Highway Statistics).

Up until the 1970s such diversion and sharing of funds did not have serious effects on most state highway programs. Cars were getting bigger and, because of new environmental protection requirements, the number of vehicle miles per gallon of fuel used was declining. At the same time, the number of vehicles on the road continued to increase, and the number of miles each vehicle was driven increased.

More Vehicles on Road Driving More Miles

Between 1968 and 1978, state motor vehicle registrations (excluding those for about 5 million motorcycles) increased by 47%--from 101 million to 149 million vehicles. Vehicle miles of travel increased 61%--from 962 million miles to 1.55 billion vehicle miles. Auto and truck mileage increased proportionately to their increased numbers; truck mileage almost doubled and automileage increased by about 50% (source: Tables MV-1, VM-1, Highway Statistics).

Because of the continuing increase in total vehicle miles of travel and number of vehicle registrations, state highway revenues increased. Current income increased from \$8.6 billion in 1968 to \$16.8 billion in 1978, an increase of almost 100%. In addition, \$1.0 to \$1.5 billion a year in state bonds were being issued for highway construction. In response to the increase in vehicle miles driven and increases in the tax rate, net state motor-fuel taxes rose from \$5.5 billion in 1968 to \$9.7 billion in 1978, a total increase of 76% (almost 8%/year). While state motor vehicle and motor carrier tax receipts were used in most states to cover both (a) the costs of motor vehicle and driver licensing and enforcement and (b) the highway program, registration fees increased 98% (\$4.7 billion) and total receipts rose by 119% (\$6.9 billion) in the 10 years ending in 1978 (source: Tables MV-2, MF-1, SF-1, Highway Statistics).

Major Problem Is Inflation

The result was that, even with diversions of highway revenues, the overall highway program continued to increase in real terms until the early 1970s. Then two things happened: (a) a rapid increase in inflation and (b) concentration by the highway departments on the construction of interstate highways at the expense of other road programs. Inflation has made the remaining rural interstate gaps and urban extension, as well as primary and secondary road construction, more costly; consequently, fewer miles could be constructed with the available funds.

Since 1967, composite highway price trends have increased by almost 200%, and maintenance and operating costs have increased almost 120%. By comparison, the consumer price index has increased by 100%, and the current state highway revenues have increased at the same rate as the consumer price index. The difficulty for highway programs is that, while revenues have kept pace with the general inflation, construction and maintenance costs (both of which are heavily dependent on materials and capital equipment) have increased at a more rapid rate.

How Do You Measure Success?

Over the years, the success of a highway program was viewed in terms of the number of new miles of road

constructed. A highway commission was not congratulated for the number of miles of highway it did not build--not at least, until the urban and environmental revolts of the early 1970s occurred and the no-build alternative became acceptable.

The concentration of activity was on new Interstate construction, but the states were also continuing to upgrade low-volume rural roads as well as the primary, secondary, and urban systems.

With more roads and higher types of roads, and with increasing labor costs, maintenance costs increased to about 34% of the highway budgets. To compound maintenance problems, traffic forecasters had not counted on the traffic that was induced by the creation of a new high-design highway system. Highways that were forecast to have an excess of capacity for 20 years reached capacity in 5. On high-design facilities like the Interstate, there was also a major shift of freight traffic to trucks. The result was that highways began to deteriorate at a much faster rate than has been expected.

In a similar manner administrative costs and bond debt service were taking an increasing proportion of resources (9% and 5%, respectively). Highway patrol and safety activities were costing almost another \$3 billion from all levels of government. (source: Table HF-2, Highway Statistics).

However, the situation still had not become critical until after 1974 and the first oil embargo. The real price of gasoline had been declining through the past two decades as the result of increasing consumption. Nevertheless, between 1969 and 1974, 24 states increased their motor fuel taxes by 1¢ or more. Many other states used bonds to match federal aid funds. Gradually, however, construction projects funded 100% with state monies declined and, more and more, state highway programs became limited to matching federal funds and paying the increasing costs of maintenance.

Increasing Motor Fuel Tax Rates

There was much concern about the decline in real purchasing power of the highway construction budgets and between 1969 and 1974, 25 states raised their gasoline taxes an average of 1¢. Between 1974 and 1979, another 16 states raised their gasoline taxes about a penny. Of these, 9 had previously obtained a tax increase prior to 1974. But in the 10 years between 1969 and mid-1979, 16 states had not raised their gasoline taxes and 9 had only raised it one cent. During this same period of time, the consumer price index had increased more than 100%, and the highway construction cost index had increased 200%. Since 1956, for 23 years, the federal 4¢ motor fuel tax had remained unchanged.

Since 1974, two major changes have affected the generation of motor fuel taxes. First, the public is rapidly switching to more fuel-efficient vehicles. As a result of the Iranian oil crisis, this trend has accelerated at an even faster rate than the automobile industry had anticipated. The second change is in the price of gasoline, which has increased more than 200% since 1974 and continues to increase almost daily. This is resulting in a decline in marginal trips--while there continues to be an overall increase in total vehicle miles of travel, there is a current decline in gasoline consumption of about 5%. Since motor fuel taxes have been levied on a per-gallon basis rather than a price basis, fuel tax receipts are declining even though prices continue to increase.

Elements of the Current Financial Crisis

These, then, are the elements of the current financial crisis facing the states:

1. Motor fuel consumption is no longer growing at the previous rate of 5% per year, and most states in 1979 experienced an absolute decrease in motor fuel tax receipts.
2. While fuel tax receipts have kept pace with the general inflation rate, highway construction costs have been increasing at twice the rate of the general inflation.
3. Legislatures, especially in the western states, continue to divert highway funds to related programs.
4. County and local governments have commanded a substantial share of state and federal highway-user revenues.
5. Maintenance and administrative expenses are continuing to take a larger proportion of highway revenues.
6. Revenues are derived from a tax base that does not rise at a rate proportionate to construction cost increases.
7. Rapidly escalating prime rates have severely depressed the bond market. Although recent bond issues have been passed by state legislators, it will be more and more difficult to sell long term bonds.

State highway-user revenues distributed for local roads and streets increased at a rate proportionate to that for state-administered highways (about 90%). Funds distributed for nonhighway purposes increased by 150% in 10 years while state highway patrol costs increased at a rate of 160% over funds distributed for highway capital, maintenance and administration (source: Table DF, Highway Statistics).

Highways: A Separate State Activity?

Highway departments have been insulated from competition with other state agencies for general revenue funds and are now isolated from the primary concern of governors and the legislatures. Trying to get back from this status of isolated independence has been difficult in many states. As the price for increased highway funds, legislatures are demanding greater participation in the planning, programming, and project priority process. They are no longer willing to provide a blank check. In addition, because of the broad ownership of automobiles by the entire population, a motor fuel tax increase is viewed as a general tax upon the population (like sales taxes) and not as a special-benefit tax. It must therefore be considered as part of the overall state tax package rather than by itself.

A Changing Public Attitude Toward Highways

Highways are also viewed as a mixed blessing. Though they have provided an unprecedented mobility to the people, they have also brought degradation of the environment and congestion. Excess capacity designed into the system induced greater density in

land development, which consequently led to greater congestion once again.

In the 1930s and 1940s the highway programs were successful in "getting the country out of the mud." In the 1950s and 1960s, the highway program promised and to a great degree delivered high intraurban and interurban mobility but at considerable social and environmental cost. The nation in the 1970s shifted from optimism to skepticism. While the public did not want to reduce its mobility, it did not believe in highway planning and, beginning with the Boston Restudy, realized that highway planning was a self-fulfilling prophesy. The current public expectations appear to be to maintain what we have now and improve it in terms of service level and safety. In so doing, maximum cost-effectiveness and productivity are prerequisite.

The Question of Dedicated Funding

The need for substantial additional revenues raises the whole issue of the continuing value of dedicated funding and the need for trust funding at the federal and state level. Clearly there is a need to have assured funding when an agency has to make long-term planning and financial commitments. Dedicated funds provide such assurances. There is fear that, without earmarked funds, state legislatures will use the highway program for political purposes or as a hostage for other legislative programs. Congress, even with trust funding, has failed to appropriate all funds available and the President has withheld authorized apportionments. From the highway agency's point of view, the traditional dedicated funding, if it is adequate to meet program needs, is desirable. However, even if highway funding is kept separate through dedication, the executive and legislative branches will continue to exert greater influence over the highway program through the budget and appropriation process. Therefore, the sanctity of dedicated funding is less meaningful today.

This fact is having an impact on the process of programming and establishing priorities. In the past, budgets were controlled either on the basis of lump sum appropriation or by five or six items of expenditure, such as personnel services, fringe benefits, materials and supplies, travel, and capital. Construction projects and priorities were left to the highway commission. There was no requirement for detailed approval of each project or the requirement for a clearly defined long-term construction program. Today, the trend is clearly to require that a long-term capital construction budget and a yearly set of priority projects be reviewed and approved by the governor and the legislature. In Vermont, for example, the legislature must approve and authorize funding for each project in a 10-year transportation construction program. Thus the critical issue of transportation finance includes not only how to get the resources to continue the needed highway projects but also who will control the overall highway program.

Combining the Funding for All Modes of Transportation

In the past, the federal and state highway programs have been more or less separate from the financial consideration of other transportation modes. As urban public transportation services were taken over by state and local governments because they were no longer financially viable, there was no ready

source of user charges that could be tapped to provide sufficient capital and operating revenues. In fact, for most transit systems, user charges provided less than one-third of the costs, and the state and federal governments (using the public good as justification) have rationalized the use of general-fund revenues and highway-user taxes to support these services. In a similar manner, as rail passenger and freight service became uneconomical and as railroads went into bankruptcy, federal and state general funds have been allocated to continue many services that were slated for abandonment.

User Charges as a General-Fund Revenue Source

The United States is one of the few nations that ties highway construction and maintenance expenditures to user taxes. Other countries, such as those in Europe and the Far East, use both motor fuels and vehicle license fees as a major source of general revenue funds. User charges are very high compared with those in this country, and the highway program receives only about 15% of the user tax revenues.

Congress has again mandated a study of who should pay the costs of highways among the different user groups. The prevailing attitude appears to be that each class of user should continue to pay a total tax that corresponds to the amount of highway costs that are incurred in behalf of that user group. It does not consider employing user charges to influence the modal split or level of usage of the systems. It does not consider, for example setting user charges for highways in such a way as to influence people to use public transit instead of their automobiles or to shift the movement of freight from trucks to railroads. These are not considered acceptable uses of motor vehicle taxes in today's environment. A current example of the reluctance to change the current balance of user charges is the proposal for a crude-oil tax or an excess-profits tax on deregulated oil to induce energy conservation, rather than applying taxes at the point of use.

In a similar manner, taxation has not been employed to influence demand for services. Though economists have advocated pricing transportation systems to maximize service and minimize congestion, highway builders have felt that it was their obligation to increase the capacity of the system to meet increasing demand. In fact, they perceived their responsibility as not only to upgrade facilities to meet current demand but to build in excess capacity in anticipation of future demand.

Using Highway Funds for Environmental Protection

In recent years, an area that is causing an increasing drain on highway funds is the concern for the protection of the social and physical environments. Delays and changes in projects caused by challenges of environmental groups have increased the costs of projects and the length of time necessary to build them. Where once total highway systems could be planned with good prospects of completion, now projects must be able to stand by themselves and be justifiable whether or not the rest of the system is built. This has caused a shift of concern away from building new projects on new rights-of-way to upgrading existing facilities. The trend now is toward resolving specific problems rather than system development.

Summary of the Highway Finance Problem

This is not to say that the public has lost faith in their automobiles and the high-capacity, high-comfort, safe highways on which to use them. Rather it is a feeling that the present system, though it needs improvement in certain areas, is generally adequate. In a time when real disposable income is remaining static or declining, the public is not willing to commit itself to any new system expansion. In addition, the public wants to be assured that the monies made available are used wisely and with the highest cost-effectiveness. Rightly or wrongly, often the image of the state and local highway departments to the motoring public is a highway maintenance truck with what appears to be one man working and another half dozen just standing around.

This then is the highway finance problem. It is really a composite of many problems that are all interacting in the struggle to get the needed additional tax revenues. Part of the problem is inflation compounded with the need for energy conservation. Part is due to the rapid expansion and upgrading of the highway system that is wearing out faster than was anticipated. Part is due to the inability of local governments to derive sufficient highway-purpose funds from nonuser sources, such as property taxes. Part is due to the diversion of dedicated highway-user fees to other, related nonhighway purposes. Part is due to the tendency of state highway agencies to perceive themselves as semiautonomous in the state government. Part of the problem is that highway agencies have been reluctant to give up an image of being constructors and replace it with one of being maintainers. Part is due to the environmental degradation that highways bring about. Part is due to the lack of understanding of the current public temperament and failing to package and market highway needs accordingly. Part is the fear that full participation in the general appropriations process will jeopardize the needed long term commitment of funds that is available through dedicated funds. To look on the issue as merely one of finding additional sources of revenues in order to maintain the current state highway system is to avoid coming to grips with all these factors that are at work and that must be jointly addressed. The funding issue is only the tip of the iceberg.

THE SOLUTION

Marketing Strategies for Transportation Finance

Faced with the multiple issues in financing state highway programs, what can state highway agencies do? "Do your homework and start early" was the general consensus of a recent meeting at the Transportation Research Board of state and local highway administrators and state legislators. In the past, with a strong highway lobby and with earmarked funding, getting the needed additional revenues approved by the governor and the legislature was easy compared with the current public climate, which is very skeptical of increases in government spending.

Looking at those states that have been most successful in obtaining additional highway revenues, there appear to be a number of common elements. First there has been a well-conceived and well-executed marketing strategy. Second, the agencies have achieved a credibility with the legislature and the public both as to the needs and as to how the revenues will be spent. Finally, the highway agencies appeared to have a good understanding of the public desires and how to work within the complex political process in which there are a multiplicity of actors and objectives.

Throughout the history of most highway agencies, there have not been clearly stated programs and priorities and often construction projects were developed on an annual basis. Over the past decade, more and more states are developing 5- to 10-year published construction programs although frequently the criteria for establishing needs and priorities are still vague. Needs studies presented to the legislatures for highways and for the other modes have been merely extravagant wish books and out of proportion to any possibility of funding. Consequently, in seeking more funds, the traditional strategy has been to use the highway lobby to drive through the legislature modest increases in motor fuel taxes and registration fees. In the past, the revenue package was marketed without being tied to specific construction programs. It appears that the trend now is for the legislature and the public to first demand a well conceived program package and then to consider the source of funding. Therefore, the first step in obtaining additional revenues is to justify the needed highway program and achieve credibility and an image of efficient management.

Justifying Highway Needs

Highway needs studies have generally been developed by using two approaches. One is to canvas the highway district engineers and have them identify the projects needed in their area. The second is to develop a statewide rating system, such as a sufficiency rating or road serviceability index that assesses engineering deficiencies, traffic congestion, safety, and other factors, and to rank highway needs according to their deficiencies. These might be called professional ranking of highway needs. Some states maintain continuous monitoring techniques for assessing highway conditions and needs. These engineering-based needs are first allocated according to required balancing of resources by region or district and then are arrayed into a project priority program and used to develop a five-year or longer construction program.

A number of states have successfully used their long-term proposed construction programs to justify their needs to the legislature. In presenting these construction programs, at least three options are usually given: (a) a construction program using current resources, under which basis the system's capital investment and service levels are allowed to decline; (b) a moderate increase in program level, which would provide sufficient resources to maintain the existing systems but not provide for needed increases in service levels, and (c) a program adequate both to maintain the current service levels and to provide for additional improvement to the highway systems.

Some states that use this approach, such as Illinois, have not provided a specific list of projects that are to be built. The Illinois DOT was afraid that the legislators and interest groups would use it as a "hit list" and, under such conditions, would injure the chances for agreement

on new revenues. Other states, like Texas and Washington, were very specific as to which projects would be built with different levels of funding and also which projects would not be built if funding were not sufficient. Different political climates in these two cases resulted in both approaches being successful. In Washington, where the motor fuel tax was referred to the voters, a subsequent analysis of the vote indicated that the areas receiving the major new construction projects also provided the greatest voter support. This was contrary to what the strategists had forecast.

The development of a clearly defined construction program in which projects to be built and not built are clearly spelled out provides the governor's office, the legislature, and the public a much greater opportunity for scrutiny than in the past. Many highway commissioners feel that the more the governor and the legislature know about the highway program, the more they will attempt to dictate and control it. This may be the case, however, it seems more and more an unavoidable condition for additional funding. The last decade has seen an ever-increasing budgetary review by governors and legislatures of transportation activities. Rather than resisting this process, transportation agencies might better try to channel the budgetary and fiscal review in such a way as to preserve the integrity of the highway program from improper political manipulation. Perhaps one of the best ways that this can be done is to openly and publicly set forth the criteria used for determining project needs and priorities.

The Need for Public Involvement

In our democratic political process, it is mandatory that if a politician is to be reelected, he must represent the desires of his constituency and also obtain for his district as many favors and benefits as possible. Bargaining and trading for construction projects is clearly not in the best interests of the highway program. Where the program and project priority criteria are open and public, there is less chance of inequitable political dealing.

A vital element in obtaining additional revenues and for preventing political manipulation of pet projects is getting wide public involvement in highway program development. Since the inception of the Interstate program, there has been a growing tendency to develop highway programming on the basis of professional planning and engineering judgment rather than through negotiation with local government officials and interest groups. This was reasonable, recognizing that the Interstate and primary arterials are of national interest and transcend local interest and priorities. However, the majority of the state highway systems are primarily of local rather than national interest and, through local government and quasi-government agencies such as metropolitan planning organization and regional planning agencies, the local residents are once again gaining a major say in projects and priorities.

In citizen-participation activities, highway agencies are keenly aware of the difficulties in involving the public. Special interest advocates tend to dominate public hearing and the average citizen is not sufficiently interested to participate or voice an opinion. Nevertheless, legislators must be convinced that they are acting in accordance with the wishes of their constituency. Thus, the highway agency must not only set up a professionally based priority program, it must

also incorporate variations in responses to local concerns and priorities. There is a general cynicism toward highway public hearings. The highway agency is viewed as coming to tell the public what it is going to do rather than asking for advice and suggestions. To gain the support of the average citizen is going to require that highway agencies learn to be better listeners. Because funds are inadequate to build all the needed projects, we are quickly returning to the pre-Interstate approach of building projects where they have public support and not pressing projects where there is a high level of controversy. Since, in most states, counties and metropolitan governments share in the highway-user tax revenues, it might behoove all parties to coordinate their highway construction programs and funding proposals to the state legislatures.

Developing a Marketing Strategy

Those states that have been most successful in obtaining additional revenues have developed a marketing strategy to sell the funding package. The following are some strategies that have proven effective.

First, the positive approach has been more successful than the negative. Neither the legislatures nor the public have responded to threats, that without additional funding the highway system will decay to a disastrous condition. States that have relied on fear tactics to sell their funding program have usually failed. On the other hand, where the programs and projects are clearly defined, where the legislature knows exactly what new monies will buy, there has been substantial success.

While state highway personnel are legally prevented from politically campaigning for a legislative proposal or for a referendum, they are able to provide information to good roads associations, contractors associations, and other groups that will actively campaign and lobby. Taking an aggressive posture has proven more successful than a defensive one. This means mounting the marketing campaign and taking it to the public before the opposition has become organized and solidified.

Above all, it is imperative that the needs and funding proposals be explained to the news media. It is also important to keep the media current on all changes in proposals. If you can get the news media, the special interest groups, and the public convinced of the validity of the additional funding required, they will sell it to the legislature.

In most states, the counties and cities share in state highway user taxes. Usually, they receive one-third to one-half of the net motor fuel tax receipts and also frequently a percentage of the motor vehicle license fees. Therefore, a state highway increase is also a local revenue increase. The state highway agency should work closely with the local government units to enlist their positive support to get the tax measures passed. In one state where the revenue measure failed, it was suggested that part of the reason may have been the failure of the counties and cities to actively work for the tax bill.

Timing as the Key to Marketing Strategies

Timing of the funding package is critical. Because of the many demands for attention, the public is crisis oriented. Though it is frustrating to planners, the public will only react if it is convinced that there is in fact an impending crisis. Therefore, in timing the funding proposals

to the legislature, it is necessary to avoid periods when more pressing concerns take precedence. Some highway agencies, accordingly, try not to offer tax proposals during an election year or a year when there are major changes in the welfare or education programs. Defeat of an ill timed or poorly marketed highway finance package will generally hurt the chances the next time one is offered.

Many states have waited until a month or two before the legislative session to develop the funding package. Legislators are under such pressure for their time and attention during the legislative session that they cannot adequately consider the highway program's needs and funding package. Several state DOT's have successfully used the technique of visiting every legislator between sessions to explain the program. During the legislative session, each legislator is again individually contacted to refresh his understanding.

It is important to identify both interest groups that will support the proposals and those from whom opposition can be expected. If potential opposition groups cannot be converted into supporters, at least they may be neutralized.

As part of the strategic planning, the costs and benefits must be identified. Who pays the costs, who receives the benefits, are they equal and should they be? This program cost and benefit analysis should be compared between geographic regions, between user groups, and between users and nonuser sectors and between urban, suburban, and rural areas.

Band-Aid Funding

In the preliminary stages, it is desirable to determine both public and legislative preferences as to source of funding. While an inflation-sensitive tax may be attractive to the highway agency, the more traditional cents-per-gallon tax may be preferred by the public. The means of funding should be flexible and not act as an impediment in achieving additional revenues. Most state legislatures continue to prefer the traditional cents-per-gallon tax. While this will not resolve the highway finance issue with a continuing rapid inflation and stable or declining fuel consumption, it will temporarily maintain the program until a more comprehensive finance package can be achieved.

Funding Alternatives

The state of Washington was the first to approve a 22-1/2% variable fuel tax with a maximum limit equal to 12¢/gallon. It passed the legislature and was approved by the voters by a fraction of a percentage. For many years, prior to the passage of the tax, the Washington Department of Transportation had been receiving budget authorizations from the state legislature substantially in excess of revenues to fund the approved programs. The variable gasoline tax was aimed at bringing revenues in line with the existing level of budget authorizations. Other states that have attempted to follow with variable fuel taxes have been less successful, because such inflation-sensitive funding would once again put the highway program beyond the review and control of the legislature. In New Mexico, the second state to pass a variable gasoline tax, the rate of tax increase was limited to no more than 1¢ per year.

In considering funding packages, it may be easier and more palatable to amend the existing tax structure than to establish a new one. Many states

currently have substantial general fund balances. In such circumstances it may be easier to get nonspecific highway activities such as the state highway patrol and parks and recreation activities, transferred from earmarked highway revenues to a general-fund appropriation. Similarly it may be easier to get sales taxes on motor fuels, automobiles, and automotive parts and accessories earmarked for state highway purposes. It may be propitious to use general-fund support when there is a surplus rather than attempt to obtain a gasoline or license tax increase at the same time the legislature and governor may be pledged to a general tax decrease. Texas, Colorado, Georgia, and Indiana are some states that have used these techniques.

Another alternative revenue source is eliminating loopholes in the existing laws. These may not supply substantial new revenues, but they help. Illinois, for example, is now levying a sales tax on cars sold by private parties. Several states have been successful in obtaining the interest on cash balances directed to the highway fund.

While the concept of new tax sources is appealing, most states have wound up with a 1-2¢ gasoline tax increase. However, as the price of motor fuel has increased to \$1.25 per gallon, states are reconsidering a variable fuel tax, since it requires only an 8% sales tax to produce the equivalent of a 10¢ per gallon tax now compared with the 16% sales tax required when the price of fuel was 60¢ per gallon. It remains to be seen whether legislatures and the public will accept this lower tax rate substitute or whether the issue is a more fundamental one of the degree of independence that the highway agency may continue to exercise.

The Shaky Future for Earmarked Funding

The question of whether user taxes should continue to provide total funding for transportation is beginning to be raised. The massive injection of federal general revenue fund for capital and operating subsidies for Conrail and Amtrak and the use of general funds at both the federal and state levels to finance public transit subsidies raises the question of the continued justification of earmarked highway and airway trust funds financed by user payments. Though it does not have much prospect for passage, the President has advocated a 50¢ per gallon tax on motor fuels as part of his energy conservation package. In several states (for example, Maryland) gasoline taxes are being dedicated to fund transit subsidies and to match UMTA capital grants.

The elimination of earmarked funds will probably not come through direct action by the legislatures. Rather it will come through erosion of inflation over time, with the legislature focusing ever more scrutiny and control with each new revenue measure. Accordingly, legislatures and the public can be expected to resist hidden taxes, that is, those that are sensitive to inflation without requiring further legislative action. They may, on the other hand, be willing to provide inflation-adjustment schemes such as the one that Texas has whereby highway construction costs are indexed and the difference between revenue increases and construction cost inflation is made up from the general fund.

Summary

The approach to funding the highway program is undergoing a major change. There is no longer the general support for highways that there used to be. Highway agencies are often viewed as wasteful and

inefficient in the use of personnel, materials, and money. The public has little sympathy for grandiose new road programs, but it wants the existing system well maintained. It is no longer sympathetic to bureaucrats and planners, regardless of their good intentions, dictating a self-serving road program. The political uses of highway funds and highway jobs has become notorious in a number of states. The public and legislatures are also aware that, where they have insulated highway commissions from the regular political process, such commissions tend to become equally insulated from the public's wishes and desires.

Now, through the governor, the legislature, the press, the ballot box, and the referendum, the public is exerting greater control over the highway program. States that have been most successful in financing their highway program have done so, most often, through candor and by means of a well publicized program for construction and maintenance. They have strategically planned the marketing of the highway program and funding package and have mounted a massive information drive well in advance of the legislative session. They have been willing to bend with the wind and accept more public scrutiny and review of their program and they have been willing to accept amendment to the existing tax structure rather than attempting major new inflation-sensitive proposals that would constitute hidden taxes. They also know that the traditional funding structures will not resolve their long term declining or static revenue base, but they have faith that the public and the legislature will meet each financial crisis as it arises.

There has been much said about the impending disaster to the national highway system. The public is tired of the alarmists. They do not believe the gamesmanship or the pyramid of statistics that can be produced to prove such assertions. What they want is an efficient highway administration that will maintain the current system at a high level of service and will build those few remaining links in the network that are considered vital to mobility or safety.

The solution to the critical issue of highway finance is more than finding a few dollars more. It is a new way of thinking and responding to the public.

APPENDIX

The appendix is composed of a number of tables that were extracted from the U.S. Department of Transportation Annual Publication Highway Statistics. The tables are referenced and individual states may wish to compare their figures that can also be obtained from these reports. In addition, several graphs and trend line charts have been extracted from the 1977 and 1978 Highway Statistics that provide valuable comparisons.

APPENDIX

TABLE 1

Federal Aid Highway Apportionments (in billions of dollars)

1970	5.4
1971	5.4
1972	5.5
1973	5.4
1974	4.8
1975	5.4
1976	5.9
1977	5.7
1978	6.0
1979	6.2
1980	6.3

Excludes safety and other federal funds for highway related programs

Source: Table FA-4 Highway Statistics

TABLE 2

Federal Revenues From Texas on Motor Fuels and Special Fuels
(in billions of dollars)

Year	Gasoline	Special Fuel	Total
1967	2.800	.197	2.997
1968	2.973	.211	3.184
1969	3.172	.241	3.413
1970	3.409	.265	3.674
1971	3.514	.275	3.789
1972	3.737	.322	4.059
1973	3.959	.358	4.317
1974	3.855	.373	4.228
1975	3.884	.362	4.246
1976	4.141	.409	4.550
1977	4.230	.453	4.683
1978	4.382	.488	4.870

Source: Table FE-205, 1971 Highway Statistics

TABLE 3

Federal Revenue From Texas on Vehicle and Automotive Products
(in billions of dollars)

1967	2.5
1968	2.8
1969	3.3
1970	3.1
1971	3.4
1972*	1.1
1973*	1.5
1974*	1.5
1975*	1.2
1976*	1.3
1977*	1.7
1978*	1.9

*PL92-178 repealed the automobile federal excise tax effective 8/10/1971

Source: Table FE-206 1977 Highway Statistics

TABLE 4

U.S. Motor Fuel Consumption (in billions of Gallons)

Year	Gasoline	Special Fuels	All Motor Fuel
1967	72.8	5.0	77.8
1968	77.3	5.6	82.9
1969	81.8	6.2	88.0
1970	85.6	6.6	92.2
1971	90.0	7.4	97.4
1972	96.7	8.3	105.0
1973	100.8	9.6	110.4
1974	96.5	9.6	106.1
1975	99.4	9.4	108.8
1976	105.2	10.5	115.7
1977	108.3	11.4	119.7
1978	112.4	12.5	124.9

These are taxable gallons of fuel net after exemptions and refunds

Source: Table MF-2, Highway Statistics

TABLE 5

State Motor Fuel Tax Receipts (in billions of dollars)

	Total Receipts*
1967	5.0
1968	5.5
1969	6.0
1970	6.5
1971	6.9
1972	7.6
1973	8.4
1974	8.1
1975	8.5
1976	8.9
1977	9.3
1978	9.7

*adjusted net total receipts

Source: Table MF-1, Highway Statistics

TABLE 6

State Motor Vehicle Registrations (in millions)

Year	Autos	Buses	Trucks	Total	%Change
1967	80.4	.3	16.2	96.9	3.2%
1968	83.7	.4	17.0	101.0	4.2%
1969	86.9	.4	17.9	105.1	4.2%
1970	89.3	.4	18.7	108.4	3.1%
1971	92.8	.4	19.8	113.0	4.3%
1972	96.9	.4	21.2	118.5	4.9%
1973	101.8	.4	23.2	125.4	5.6%
1974	104.9	.4	24.6	129.9	3.4%
1975	106.7	.5	25.8	133.0	2.3%
1976	110.4	.5	27.7	138.5	4.2%
1977	113.7	.5	29.6	143.8	3.8%
1978	116.6	.5	31.7	148.4	3.5%

Source: Table MV-1 (excluding motorcycles which are about 5 million in 1978)

TABLE 7

State Motor-Vehicle and Motor Carrier Tax Receipts (in billion of dollars)

Year	Regist. Fees	Total Receipts*
1967	2.250	2.894
1968	2.399	3.161
1969	2.632	3.508
1970	2.870	3.800
1971	3.013	4.063
1972	3.188	4.395
1973	3.452	4.789
1974	3.661	4.997
1975	3.699	5.107
1976	4.403	6.104
1977	4.427	6.373
1978	4.749	6.936

*includes driver's licenses, certificate of title, titling taxes, fines and penalties, local collection service charges, carrier gross receipts taxes, ton-mile and passenger taxes, special license and franchise taxes, permit fees, and miscellaneous receipts

Source: Table MV-2, Highway Statistics

TABLE 8

Current State Highways Revenues (in billions of dollars)

Year	Current Income	Yearly % increase	Issue of Bonds* for Capital Outlay
1967	7.9		1.0
1968	8.6	8.9%	1.3
1969	9.5	10.5%	1.2
1970	10.4	9.5%	1.3
1971	10.6	1.9%	2.5
1972	11.8	11.3%	1.7
1973	12.9	9.3%	1.2
1974	13.2	3.1%	.8
1975	13.5	2.3%	1.4
1976	14.5	7.4%	1.4
1977	15.3	5.5%	1.2
1978	16.8	9.8%	.9

*10 states account for about half of the total outstanding debt.

Source: Table SF-1, Highway Statistics

TABLE 9

State Expenditures and Grants-in-Aid For Local Roads and Streets
(in billions of dollars)

Year	County & Township Roads	Municipal Streets	Total
1967	1.6	.8	2.4
1968	1.6	.9	2.5
1969	1.7	.9	2.6
1970	1.9	1.0	2.9
1971	2.0	1.1	3.1
1972	2.1	1.2	3.3
1973	2.3	1.4	3.7
1974	2.3	1.5	3.8
1975	2.4	1.5	3.9
1976	2.6	1.6	4.2
1977	2.7	1.7	4.4
1978	3.0	1.8	4.8

Source: Table SF-6, Highway Statistics

TABLE 10

Disposition of State Highway User Revenues Between State and Local
Highway Programs and for Non-Highway Purposes (excluding mass transit)
(in billions of dollars)

Year	For State Administered Highways	For Local Roads & Streets	For non-Highway Purposes
1967	4.9	2.0	.6
1968	5.2	2.2	.8
1969	5.9	2.3	.8
1970	6.3	2.5	.9
1971	6.5	2.6	1.2
1972	7.4	2.9	1.3
1973	8.0	3.2	1.3
1974	8.0	3.2	1.1
1975	8.0	3.4	1.1
1976	8.6	3.6	1.4
1977	9.0	3.8	1.5

Source: Table DF, Highway Statistics

TABLE 11

Disposition of State Highway User Receipts - Between State Highways
(in billion of dollars)

Year	Highway Cap, Maint. & Adm.	State Patrol	Debt Service	Total
1967	4.0	.4	.5	4.9
1968	4.2	.5	.5	5.2
1969	4.7	.6	.6	5.9
1970	5.0	.6	.7	6.3
1971	5.0	.7	.8	6.5
1972	5.7	.8	.9	7.4
1973	6.1	.9	1.0	8.0
1974	6.0	1.0	1.0	8.0
1975	5.8	1.1	1.1	8.0
1976	6.4	1.1	1.1	8.6
1977	6.7	1.2	1.1	9.0
1978	7.0	1.3	1.2	9.5

Source: Table DF, Highway Statistics

TABLE 12

Receipts of Counties and Townships for Highways (in billions of dollars)

Year	From Local Revenue Sources	From State Sources	From Federal Sources	From Barrowing	Total Receipts
1967	1.0	1.2	.04	.3	2.5
1968	1.1	1.3	.04	.3	2.7
1969	1.2	1.4	.05	.2	2.9
1970	1.3	1.5	.07	.2	3.1
1971	1.4	1.5	.08	.3	3.3
1972	1.4	1.6	.08	.3	3.4
1973	1.6	1.8	.3	.3	4.0
1974	1.8	1.8	.4	.2	4.2
1975	2.0	1.9	.4	.3	4.6
1976	2.2	2.0	.4	.3	4.9
1977	2.3	2.1	.5	.4	5.3

Source: Table LF-1, Highway Statistics

TABLE 13

Receipts of Municipalities for Highways* (in billion of dollars)

Year	Local Revenues	Payment from States	Borrowing	Total
1966	1.5	.6	.4	2.5
1967	1.6	.7	.5	2.8
1968	1.8	.7	.5	3.0
1969	2.0	.8	.4	3.2
1970	2.1	.9	.5	3.5
1971	2.3	.9	.6	3.8
1972	2.5	1.0	.7	4.2
1973	2.8	1.2	.7	4.7
1974	3.0	1.2	.8	5.0
1975	3.6	1.1	.8	5.7
1976	3.7	1.2	.8	5.7
1977	4.0	1.3	.9	6.2

*excluding urban federal-aid highway funds, flood relief, civil defense, safety, and urban development funds.

Source: Table UF-1, Highway Statistics

TABLE 14

Estimated Vehicle-Miles Travel in the U.S. (in billions of miles)

Year	All Passenger Vehicles	Cargo Vehicles	All Motor Vehicles
1967	.784	.181	.965
1968	.779	.182	.962
1969	.864	.207	1.071
1970	.906	.214	1.121
1971	.959	.227	1.186
1972	1.009	.260	1.269
1973	1.041	.267	1.308
1974	1.023	.267	1.290
1975	1.018	.260	1.206
1976	1.104	.307	1.411
1977	1.147	.329	1.476
1978	1.200	.348	1.548

Source: Table VM-1, Highway Statistics

TABLE 15

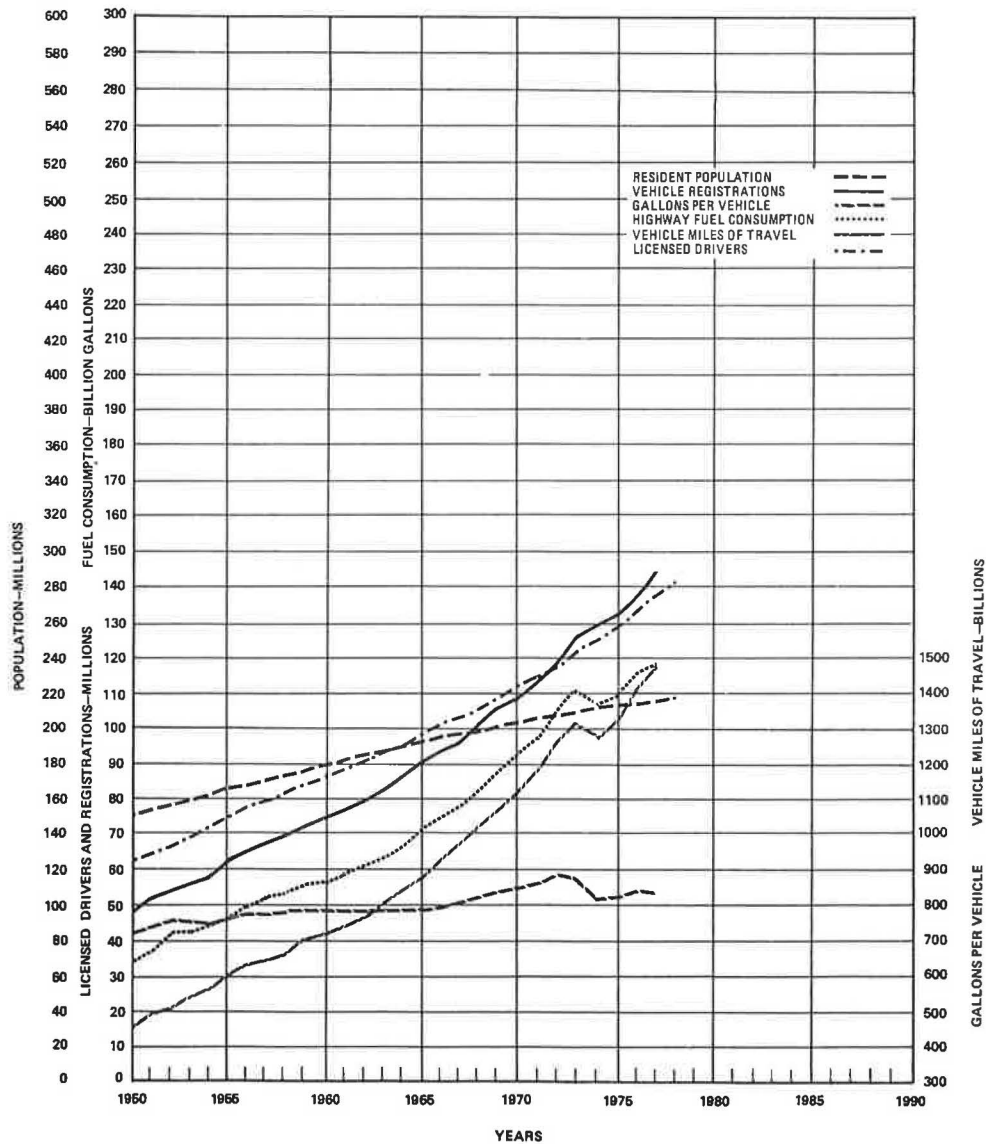
Estimated Average Miles Traveled per Gallon of Fuel Consumed

Year	All Passenger Vehicle	Cargo Vehicles	All Motor Vehicles
1967	13.93	8.46	12.42
1968	13.91	8.42	12.38
1969	13.63	8.36	12.15
1970	13.58	8.39	12.14
1971	13.61	8.38	12.16
1972	13.57	8.46	12.07
1973	13.21	8.45	11.85
1974	13.71	8.55	12.13
1975	13.56	8.57	12.09
1976	13.83	8.53	12.18
1977	14.05	8.68	12.34
1978	14.26	8.64	12.38

Source: Table VM-1, Highway Statistics

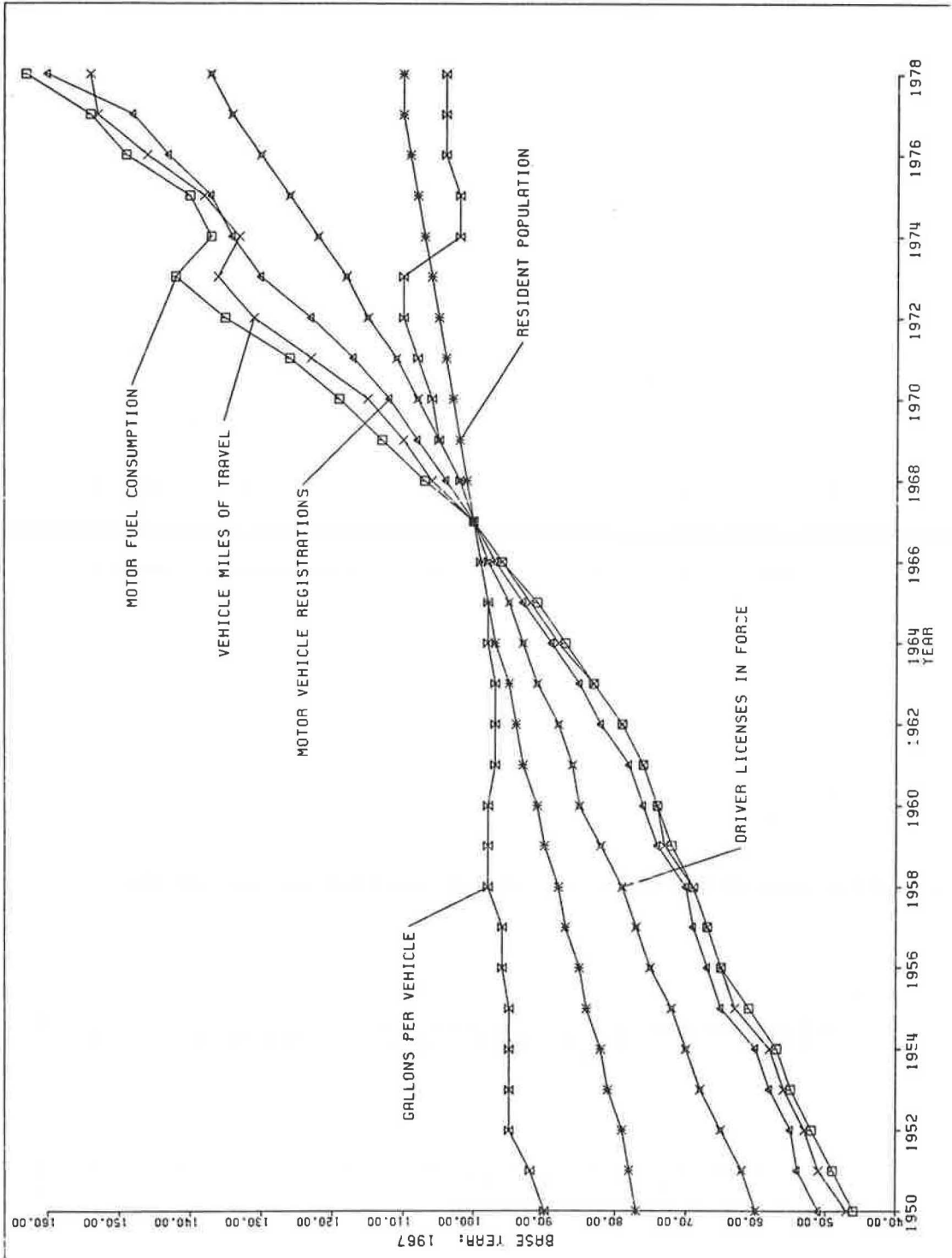
Vehicles and Drivers

RESIDENT POPULATION, VEHICLE REGISTRATIONS, FUEL CONSUMPTION, LICENSED DRIVERS, AND VEHICLE MILES OF TRAVEL



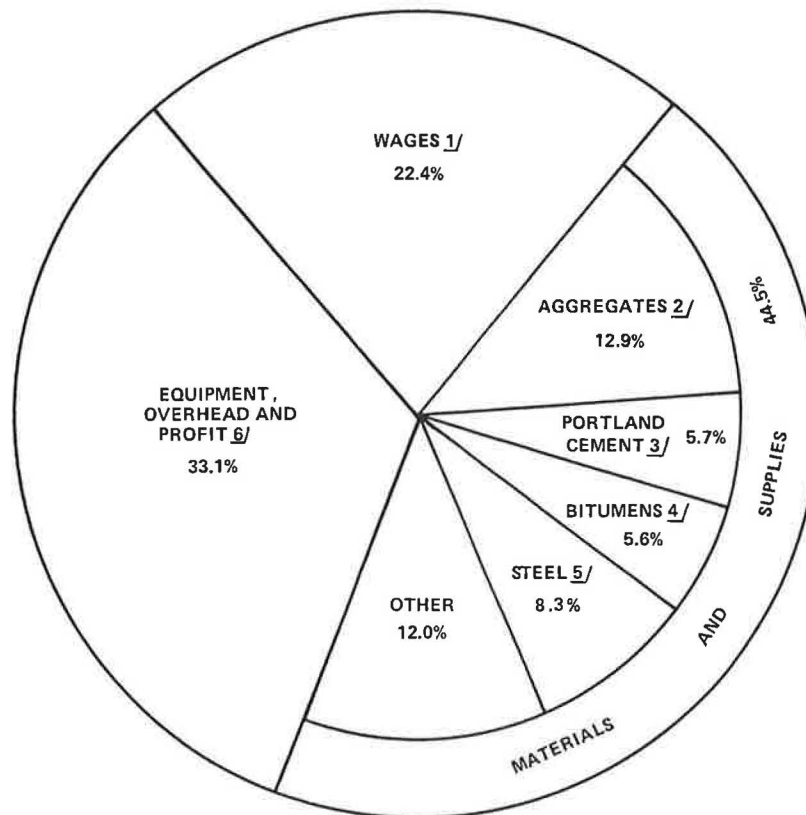
Highway Statistics, 1978

VARIOUS INDEXES USING 1967 AS A BASE YEAR



Highway Statistics, 1978

**DISTRIBUTION OF COSTS ON FEDERAL AID HIGHWAY CONSTRUCTION
CONTRACTS OVER \$500,000, EXCLUDING ALL SECONDARY PROJECTS,
REPORTED DURING CALENDAR YEAR 1978 AS COMPLETED**



- 1) Gross earnings of contractors' employees in the following classifications: Administrative and Supervisory, Skilled, Intermediate, and Unskilled labor.
- 2) Aggregates consist of sand, gravel, slag, crushed stone, etc., for use in bases, portland cement concrete and bituminous surfaces, and portland cement concrete structures.
- 3) For both roadway and structures.
- 4) For various types of bituminous surfaces and bases.
- 5) Includes structural, reinforcing, culvert and miscellaneous steel.
- 6) Equipment includes fuel and lubricants 2.8%, but excludes operators' and mechanics' wages. Overhead includes contractors' on-site expenses such as moving-in costs, office rental, taxes, licenses, insurance, etc.

Source: Federal Aid Division
Office of Engineering, FHWA

Highway Statistics, 1978

COST TRENDS HIGHWAY MAINTENANCE AND OPERATION¹

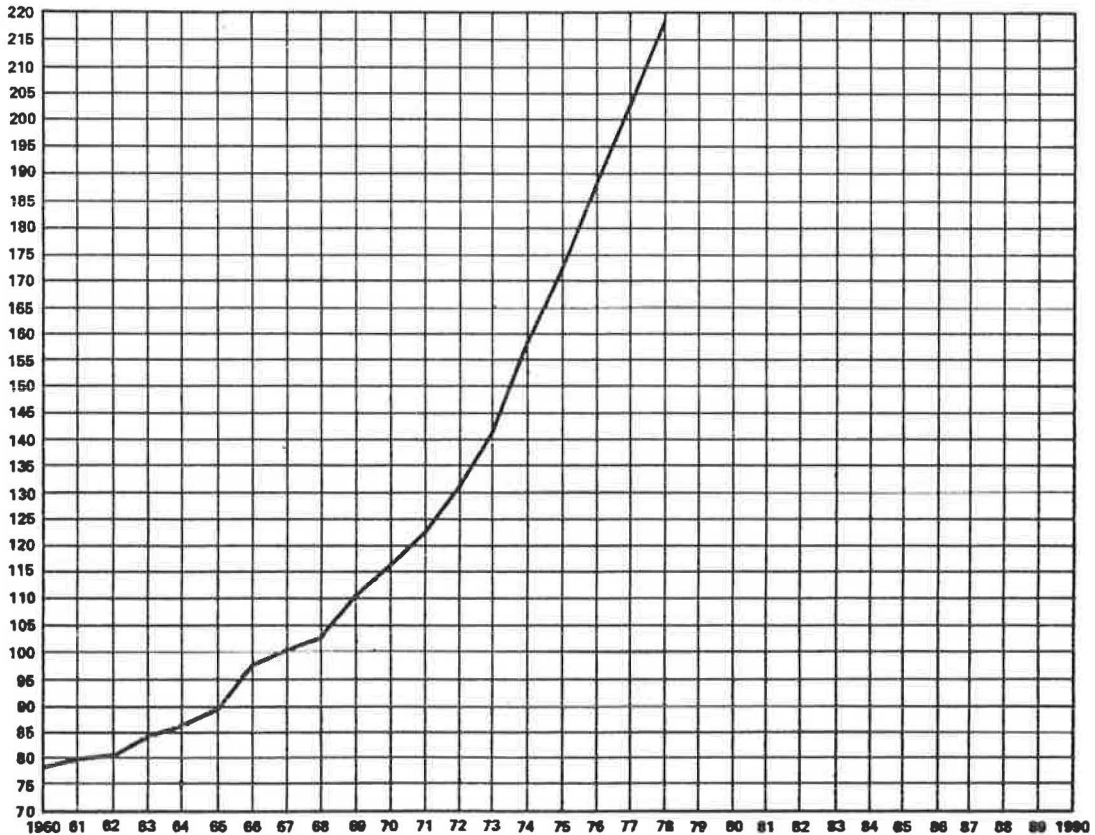
TABLE PT-5
OCTOBER 1979

1967 BASE YEAR = 100

YEAR	LABOR	MATERIAL	EQUIPMENT	OVERHEAD	TOTAL
1960	71.02	94.68	86.98	84.19	78.35
1961	73.25	95.18	87.19	85.08	79.82
1962	76.06	96.66	88.76	86.47	82.09
1963	79.46	96.87	89.25	88.05	84.32
1964	81.79	97.48	91.25	89.98	86.35
1965	85.69	99.23	94.23	92.01	89.66
1966	98.02	99.68	96.70	96.23	97.76
1967	100.00	100.00	100.00	100.00	100.00
1968	103.63	102.03	100.42	105.03	102.79
1969	113.71	106.24	104.24	110.86	110.44
1970	122.02	111.03	106.56	116.81	116.78
1971	129.67	117.37	107.93	122.76	122.68
1972	138.21	124.37	119.98	128.71	131.68
1973	148.04	130.42	133.70	134.66	141.75
1974	160.67	170.41	153.50	140.61	158.65
1975	173.15	193.74	170.58	146.56	172.97
1976	192.99	192.74	184.37	152.51	188.08
1977	211.89	202.66	194.17	158.51	202.92
1978	226.70	233.41	208.63	164.41	218.80

^{1/} These data are prepared from the unit cost information submitted each year by State highway departments, and cover both physical maintenance and major traffic service items including snow and ice control.

HIGHWAY MAINTENANCE AND OPERATION COST INDEX



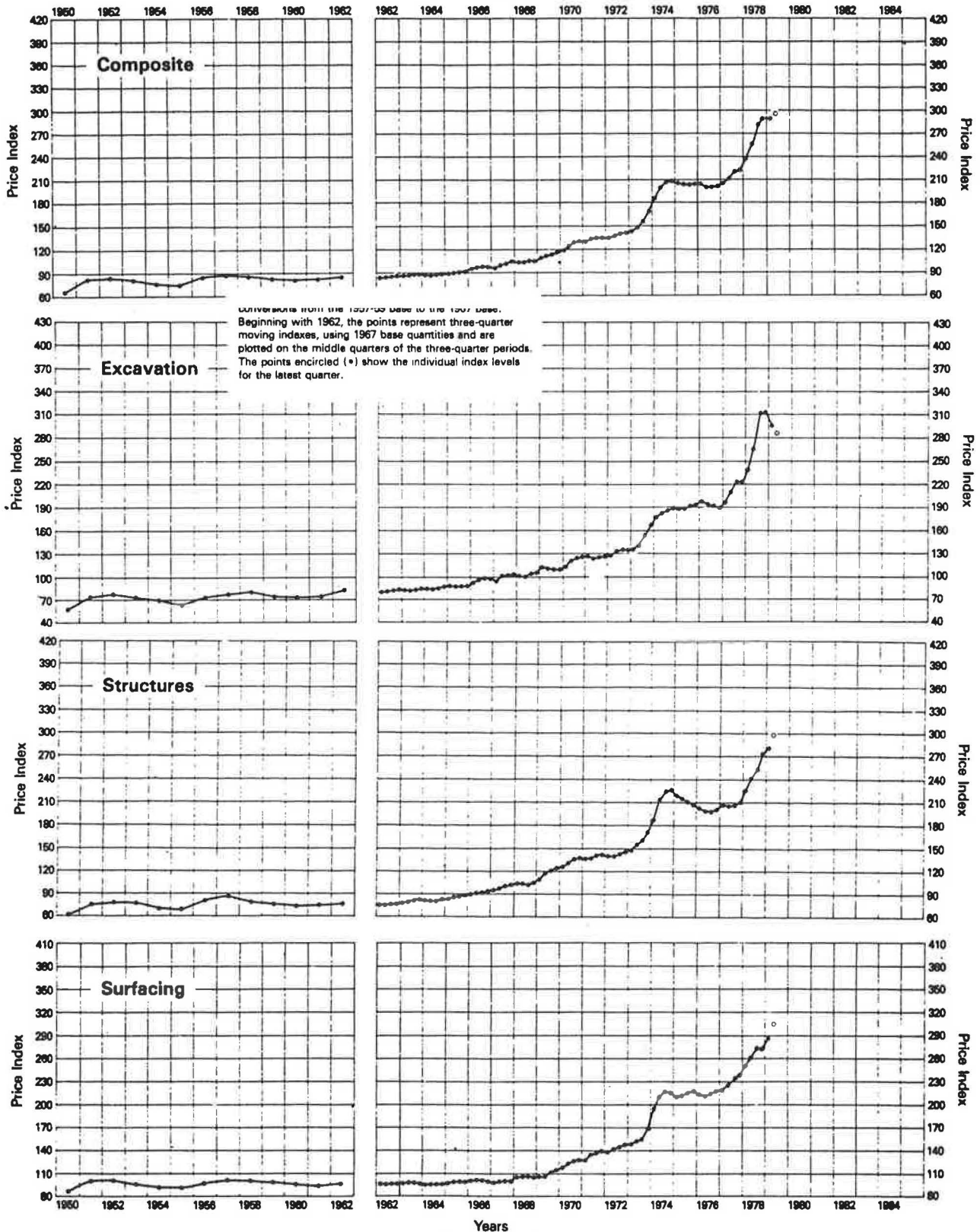
Source: Construction and Maintenance Division
Office of Highway Operations, FHWA

Highway Statistics, 1978

PRICE TRENDS FOR FEDERAL-AID HIGHWAY CONSTRUCTION¹

1967 = 100

Years



converted from the 1967 base to the 1967 base.
 Beginning with 1962, the points represent three-quarter
 moving indexes, using 1967 base quantities and are
 plotted on the middle quarters of the three-quarter periods.
 The points encircled (•) show the individual index levels
 for the latest quarter.

¹/ Detailed information is available from the Federal Highway Administration in its quarterly publication "Price Trends for Federal-aid Highway Construction," prepared by the Federal-aid Division, Office of Engineering, F.H.W.A.