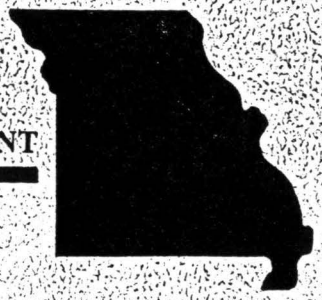
1990 HIGHWAY COST ALLOCATION STUDY



MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT

HIGHWAY COST ALLOCATION STUDY

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Division of Planning

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In Cooperation With

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PREFACE

The state highway system in Missouri operates on a "pay as you go" basis. All state funds for construction, maintenance and administration of the system are derived solely from fees assessed on the ownership and/or operation of vehicles within the state. Revenue from such fees is supplemented by federal funds which are similarly derived.

This study is limited to the state highway system and follows the traditional concept that the highway user is the beneficiary and is therefore responsible for the cost. Several other state agencies receive a portion of state highway revenues for reimbursement of highway-related costs. By constitutional provision, cities and counties also receive a portion of the state collected revenues for use on roads and streets under their jurisdiction. Although local jurisdictions receive some road funds from property taxation unrelated to vehicle operation or ownership, none of these funds accrue to the state system.

Previous studies have estimated the cost responsibility assignable to the various vehicle registration classes and the revenues generated by them. This study is an update of the 1984 cost allocation study conducted by the Division of Planning. The enactment of Proposition A in 1987 included new tax structures which had significant effects on the allocation of cost responsibility.

The study does not reflect or address highway needs. It uses available data to determine the estimated vehicle cost responsibility and payment for fiscal year 1990, which was assumed to represent an average condition since the passage of Proposition A.

REPORT SUMMARY

In 1990, the state system of highways included 32,285 roadway miles. Of this, 1,178 miles were interstate, 6,806 miles were primary and 24,301 miles were supplementary highways. This represents an increase of 39 miles since 1985.

Since the 1984 study, annual travel on this system increased 22.9 percent to 36.0 billion vehicle miles. Vehicle registrations, excluding motorcycles, have grown from 3.605 million to 3.859 million, a 7.0 percent increase. Passenger car travel has increased from 20.1 billion vehicle miles annually to 24.1. Light truck travel likewise has increased from 6.3 billion vehicle miles annually to 8.4. The heaviest trucks (over 60,010) registered for beyond local are now traveling an estimated 2.7 billion vehicle miles annually, an increase of 20.1 percent.

THIS STUDY IS NOT A NEEDS STUDY. It is intended solely to determine the proper allocation of costs and payments to vehicles in the various vehicle registration classes.

The total state user obligation for cost of the state highway system during 1990 was $571 million. State funds used directly by the Missouri Highway and Transportation Department amounted to $448 million of which $179 million was allocated for the construction program, $198 million for maintenance and $71 million for administration, O.A.S.I. and fringe benefits.

State funds transferred to other agencies for costs of highway related services and other obligations mandated by law account for another $123 million.

The total 1990 annual cost attributed to the state system of highways and services of supporting agencies was $824 million which includes use of all federal funds available for highways. This cost is judged to be the direct responsibility of the users (motor vehicle owners and/or operators) who derive direct benefit from the highway system.

Income from fuel tax, registration and other fees and miscellaneous receipts were $571 million in 1990.

The results show overpayment with respect to responsibility for passenger cars and underpayment by most beyond local trucks registered above 18,000 pounds. Comparisons of responsibility and payments for local trucks reveal a variation in overpayment and underpayment among the weight groups.

I

INTRODUCTION

Over five million Missourians are joined by many non-resident users to take advantage of more than 32,000 miles of state-maintained highways for business and pleasure. Although this system represents only 27 percent of the total road and street mileage in Missouri, it carries 72 percent of the travel.

Municipal, county and township systems augment the state highway system which makes possible a road network providing virtually door-to-door travel throughout Missouri.

There were 3.9 million vehicles registered in Missouri in 1990. Passenger cars represent 71 percent of the total with trucks and buses accounting for the remaining 29 percent. Motorcycles are not a direct part of this data but over 67,000 were registered in 1990.

This study seeks to determine the distribution of costs associated with improving, maintaining and administering the state highway system between the various vehicle classifications.

HOW IS THE SYSTEM SUPPORTED?

The predominant sources of state revenue for the state highway system are the motor vehicle fuel tax (eleven cents per gallon), motor vehicle registration fees and one-half the sales tax on motor vehicles.

The funds mentioned are all generated from fees on the highway user - that is, motor vehicle owners and/or operators.

Portions of these funds are allocated to other jurisdictions as provided by law. This study is confined only to those funds available for use on the state highway system.

WHAT ARE THE STUDY BOUNDARIES?

This study considered fiscal year 1990 state highway system revenue and use by the various registration classes.

The following evaluations have been developed:

Allocation of user costs by registration class;

Comparison of user costs to user generated revenue.

WHAT IS CONSIDERED IN ALLOCATING COST RESPONSIBILITY?

While the provision of a state highway system for the mobility of the state's residents is beneficial to the economic well-being of the state and affects the lives of all its citizens, the cost of operating the system has traditionally been considered to be a direct obligation of the highway user. Allocation of cost to the user, who directly benefits from the system, considers such factors as vehicle size, vehicle weight, and miles traveled by the various vehicle registration classes and the relationship between the costs and the factors associated with each class.

HOW WAS THE DATA OBTAINED?

The state maintains records of system mileage, vehicle classification and miles traveled by the various classes of vehicles. Data from automatic vehicle classification and weigh in motion equipment and visual observation are used to gather data on commercial vehicle operating weights, vehicle types and registration groups.

Construction, maintenance and administrative costs are contained in department files.

II

VEHICLE AND SYSTEM CHARACTERISTICS

This portion of the report analyzes financial data for fiscal year 1990 and average annual travel for calendar year 1990. This data provided the basis for the allocation of costs and payments for the study.

WHAT ARE THE TRENDS IN VEHICLE REGISTRATION?

Since 1985, vehicle registration in Missouri has increased 7.0 percent. Passenger car registration has increased by slightly less than three percent and truck registration by more than 22 percent. Table I shows the 1990 registrations by class.

Trucks registered as "local" are restricted to a 25-mile radius from the municipality of registration. Farm trucks are exempted from this restriction when hauling the owner's property. The number of trucks registered as local remains fairly stable but represents a decreasing percentage of total truck registration. Trucks registered as "beyond local" are authorized to operate anywhere within the state.

In recent years, a growing trend toward the use of pickup trucks and vans for personal transportation has somewhat reduced the total percentage of passenger cars.

Throughout the state system, passenger cars represented 71 percent of the vehicles with panel-pickup trucks representing 18 percent. Heavier trucks make up the balance of 11 percent. Vehicle registrations by class are shown in Table I.

HOW FAR DO THEY TRAVEL?

Vehicle miles of travel for 1990 are shown in Table II and percentages are shown in Table III. Annual travel per vehicle on the state system was estimated for each registration class. Estimates are based on 1990 vehicle classification counts and registration data.

Average annual vehicle miles per unit on the state system for 1990 were estimated at 8,770 for passenger cars and 10,870 for trucks. However, averages can be misleading. For example, truck travel increases dramatically as the registered weight increases. This is indicated in Table II which shows average travel for vehicles in each registered weight group.

HOW LARGE IS THE SYSTEM AND HOW IS IT USED?

Total mileage of the state highway system in 1990 was 32,285 miles. This is only 39 miles greater than in 1985.

This mileage represents only 27 percent of the total road and street mileage in Missouri, yet it carries 72 percent of the vehicle miles traveled. Eighty-three percent of travel for trucks registered over 60,010 pounds is on the state system with 63 percent of that travel being on the interstate system.

Total annual vehicle travel on the state system in 1985 was approximately 29.2 billion vehicle miles. Travel in 1990 was 36.0 billion, an increase of 23.3 percent.

1990

VEHICLE REGISTRATIONS

Passenger Cars	2,751,678	
Truck Gross Registered Weight	LOCAL	BEYOND LOCAL
6,000# or less	84,532	601,864
6,001 - 12,000	49,971	215,416
12,001 - 18,000	12,764	20,965
18,001 - 24,000	14,930	13,669
24,001 - 30,000	10,273	8,624
30,001 - 36,000	4,699	3,393
36,001 - 42,000	2,789	1,749
42,001 - 48,000	5,239	2,363
48,001 - 54,000	7,740	3,304
54,001 - 60,010	1,623	341
60,011 - 66,000	1,893	734
66,001 - 72,000	624	---
Over 72,000	3,640	---
66,001 - 73,280	---	1,788
73,281 - 78,000	---	459
Over 78,000	---	22,478
SUBTOTAL Trucks	200,717	897,147

1990

ESTIMATED ANNUAL VEHICLE MILES OF TRAVEL
STATE SYSTEM

Local Trucks

(1,000,000)

Truck Gross Registered Weight	INTERSTATE		PRIMARY		SUPPLEMENTARY		TOTAL		
	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN	TOTAL
6,000# or less	76	138	143	42	95	77	314	257	571
6,001 - 12,000	56	102	106	31	70	57	232	190	422
12,001 - 18,000	13	15	24	4	16	7	53	26	79
18,001 - 24,000	15	17	28	5	19	8	62	30	92
24,001 - 30,000	10	12	19	4	13	6	42	22	64
30,001 - 36,000	5	5	9	2	6	3	20	10	30
36,001 - 42,000	8	3	6	1	3	1	17	5	22
42,001 - 48,000	15	6	11	1	5	2	31	9	40
48,001 - 54,000	24	9	18	2	8	3	50	14	64
54,001 - 60,010	8	3	4	-	1	-	13	3	16
60,011 - 66,000	10	4	6	1	2	-	18	5	23
66,001 - 72,000	5	2	3	-	1	-	9	2	11
Over 72,000	30	13	18	2	5	1	53	16	69

1990

ESTIMATED ANNUAL VEHICLE MILES OF TRAVEL
STATE SYSTEM

Passenger Cars and Beyond Local Trucks

(1,000,000)

	INTERSTATE		PRIMARY		SUPPLEMENTARY		TOTAL		
	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN	TOTAL
Passenger Cars	3,211	5,834	6,060	1,768	4,003	3,259	13,274	10,861	24,135
Truck Gross Registered Weight									
6,000# or less	662	1,202	1,249	364	825	672	2,736	2,238	4,974
6,001 - 12,000	247	449	467	136	308	251	1,022	836	1,858
12,001 - 18,000	39	45	72	14	50	22	161	81	242
18,001 - 24,000	26	30	48	9	33	14	107	53	160
24,001 - 30,000	34	38	62	11	43	18	139	67	206
30,001 - 36,000	16	18	29	5	20	9	65	32	97
36,001 - 42,000	18	7	14	2	6	2	38	11	49
42,001 - 48,000	28	11	21	3	9	3	58	17	75
48,001 - 54,000	49	19	37	5	16	6	102	30	132
54,001 - 60,010	8	3	5	-	1	-	14	3	17
60,011 - 66,000	24	11	14	1	4	1	42	13	55
66,001 - 73,280	69	30	41	3	11	3	121	36	157
73,281 - 78,000	19	9	11	1	3	1	33	11	44
Over 78,000	967	425	569	49	157	36	1,693	510	2,203

1990

PERCENT OF TRAVEL ON THE STATE SYSTEM

Local Trucks

Truck Gross Registered Weight	INTERSTATE		PRIMARY		SUPPLEMENTARY	
	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN
6,000# or less	13.3	24.2	25.0	7.4	16.6	13.5
6,001 - 12,000	13.3	24.2	25.1	7.3	16.6	13.5
12,001 - 18,000	16.5	19.0	30.1	5.1	20.3	8.9
18,001 - 24,000	16.3	10.5	30.4	5.4	20.7	8.7
24,001 - 30,000	15.6	18.8	29.7	6.3	20.3	9.4
30,001 - 36,000	16.7	16.7	30.0	6.7	20.0	10.0
36,001 - 42,000	36.4	13.6	27.3	4.5	13.6	4.5
42,001 - 48,000	37.5	15.0	27.5	2.5	12.5	5.0
48,001 - 54,000	37.5	15.1	28.1	3.1	12.5	4.7
54,001 - 60,010	50.0	18.8	25.0	-	6.3	-
60,011 - 66,000	43.5	17.4	26.1	4.3	8.7	-
66,001 - 72,000	45.5	18.2	27.3	-	9.1	-
Over 72,000	43.5	18.8	26.1	2.9	7.2	1.4

PERCENT OF TRAVEL ON THE STATE SYSTEM

Passenger Cars and Beyond Local Trucks

	INTERSTATE		PRIMARY		SUPPLEMENTARY	
	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN
Passenger Cars	13.3	24.2	25.1	7.3	16.6	13.5
Truck Gross Registered Weight						
6,000# or less	13.3	24.2	25.1	7.3	16.6	13.5
6,001 - 12,000	13.3	24.2	25.1	7.3	16.6	13.5
12,001 - 18,000	16.1	18.6	29.7	5.8	20.7	9.1
18,001 - 24,000	16.3	18.8	30.0	5.6	20.6	8.8
24,001 - 30,000	16.5	18.4	30.1	5.3	20.9	8.7
30,001 - 36,000	16.5	18.6	29.9	5.2	20.6	9.3
36,001 - 42,000	36.7	14.3	28.6	4.1	12.2	4.1
42,001 - 48,000	37.3	14.7	28.0	4.0	12.0	4.0
48,001 - 54,000	37.1	14.4	28.0	3.8	12.1	4.5
54,001 - 60,010	47.1	17.6	29.4	-	5.9	-
60,011 - 66,000	43.6	20.0	25.5	1.8	7.3	1.8
66,001 - 73,280	43.9	19.1	26.1	1.9	7.0	1.9
73,281 - 78,000	43.2	20.5	25.0	2.3	6.8	2.3
Over 78,000	43.9	19.3	25.8	2.2	7.1	1.6

Only 3.6 percent of the system mileage is designated as interstate, yet it carries 39.4 percent of the total vehicle miles of travel. The primary system is 21.1 percent of the system mileage and it carries approximately 32.2 percent of the total travel. The supplementary system, which is the largest at 75.3 percent of the systems mileage, carries 31 percent of the total travel.

Percentages of travel for the different classes of vehicles were determined from automatic vehicle classification counts, weigh in motion and visual observations at various locations on the highway system. This data is processed to develop the travel patterns of the motoring public.

WHAT WILL IT COST?

The 1990 state cost of operating the state highway system was $448 million or 78 percent of the total cost. The 29 percent of this cost allocated to the construction program includes the necessary match for all federal funds and the expenditure of all state funds which came to the department. Federal funds amounted to $253 million in 1990. Some of these funds are earmarked for special purposes. Over 5,450 miles of the state highway system are not on the federal aid system; therefore, federal funds are not available for those miles except for a few limited areas such as the off system bridge program.

Income in excess of expenditures were assigned to construction items on a prorated basis. Maintenance of the system required 45 percent of this cost with another 13 percent going to administration.

The breakdown of construction costs by system is shown in Table IV.

Thirty-one percent of state revenue goes to other agencies for such things as law enforcement on the state highway system, the cost of revenue collection, the cost of miscellaneous highway-related functions of other state agencies and other costs mandated by law.

These indirect costs, in millions, are distributed as follows:

Highway Patrol	$77.2
Department of Revenue	28.5
Public Service Commission	2.4
Office of Administration	2.0
State Auditor	0.5
Other State Agencies	3.0
OASI	9.1
TOTAL	$122.7

CONSTRUCTION EXPENDITURES
FY 1990 PROGRAM
ADJUSTED TO FY 1990 INCOME

	INTERSTATE			PRIMARY			SUPPLEMENTARY			TOTAL		
	RURAL	URBAN	TOTAL	RURAL	URBAN	TOTAL	RURAL	URBAN	TOTAL	RURAL	URBAN	TOTAL
GRADING	$ 387	$ 931	$ 1,318	$ 410	$ 3,330	$ 3,740	$ 130	$ 2,831	$ 2,961	$ 927	$ 7,092	$ 8,019
PAVING	764	1,836	2,600	808	6,566	7,374	256	5,582	5,838	1,828	13,985	15,812
BRIDGE REPL. AND NEW BRIDGE	177	704	881	8,938	3,915	12,853	1,832	1,482	3,314	10,947	6,101	17,048
BRIDGE REHAB.	0	0	0	951	10,533	11,484	0	0	0	951	10,533	11,484
RESURFACE	649	26	675	13,393	5,656	19,049	43,052	5,203	48,255	57,094	10,885	67,979
OTHER	7,972	11,943	19,915	12,844	3,494	16,338	8,107	6,326	14,433	28,923	21,763	50,686
TOTAL	$ 9,949	$15,440	$25,389	$37,344	$33,495	$70,839	$53,376	$21,425	$74,801	$100,669	$70,359	$171,028

III

ALLOCATION OF COST RESPONSIBILITIES

WHAT IS THE PREMISE?

The premise of the study is that the user, as a direct beneficiary of the system, is responsible for support of the system. Responsibility is defined as the cost generated in the form of construction, maintenance and administrative costs attributable to users in each registration class.

WHAT ARE THE ASSUMPTIONS?

The method is related directly to certain assumptions. The assumptions are supported by design or test data which have in some instances been modified by logical compromise to accommodate differences within the registration classes.

The basic assumptions are:

1. The state system facilities benefit the user exclusively.

2. Those costs having no relation to weight or usage factors are a uniform responsibility of all vehicles.

3. Some costs are not related to weight or frequency of axle applications. The only criterion for responsibility for these costs is vehicle miles of travel.

4. Those costs which are identifiable as being directly incurred to accommodate any class or classes of vehicles are considered to be the sole responsibility of that class or those classes of vehicles so identified.

5. As the weight which a vehicle applies to the roadway surface increases, the pavement or bridge structure required to support the vehicle must be stronger and is therefore more expensive to construct.

6. Those vehicles which apply greater or more frequent axle loads to the roadway surface cause deterioration of the pavement or bridge structure at a greater rate than do vehicles which apply smaller or less frequent axle loads to the roadway surface.

The total cost of operating the state highway system amounts to $824 million annually. This includes federal-aid funding of $253 million available for use on the state system. Since this study is limited to state fees and taxes (payments), only $571 million is allocated to the various vehicle classes.

IV

COST RESPONSIBILITIES OF THE USER

WHAT IS THE STUDY PURPOSE?

This study seeks to determine that share of the cost which is the proper responsibility of vehicles in each of the registration classes.

The 1990 state cost to be borne by users of the state system was $571 million annually. This is financed from licenses and taxes assessed on the operation of an estimated 3.9 million vehicles. While this represents an average cost per vehicle of $147, an average figure obviously does not properly reflect the relative cost responsibility of the various vehicle classes.

The method of analysis considers the makeup of the costs and how vehicles in each registration class contribute to that cost through usage and relative impact on the highway structure.

For example, certain basic costs of a bridge or a pavement are appropriately shared by all classes of vehicles. The costs required to provide additional strength for heavier vehicles are incremented in a manner compatible with the effect of the various registration classes and are shared by those classes which require the added strength until the cost for the final increment is assigned only to the heaviest vehicles.

Other costs such as traffic signals, lane striping or deicing treatment of pavements and bridges are shared by all vehicles solely on the basis of usage, since these costs are not dependent on vehicle size or weight.

Still other costs are related to the frequency and degree of load application. A typical example is resurfacing to restore a smooth riding surface. These costs are allocated taking into consideration the axle loadings applied by vehicles in each of the registration classes for that portion of resurfacing in excess of a practical minimum.

Some administrative costs are unaffected by vehicle size, weight or usage and are therefore allocated solely on the basis of numbers in each registration class. A typical case is the cost of license issuance.

In the investigation of the effects of each class of vehicle, it is necessary to consider axle configuration. This is because a load supported on individual axles with a relatively short wheelbase is just as damaging as a much heavier load distributed over tandem axles with a long wheelbase. This is illustrated in Figure 1.

From these elements, a composite responsibility is developed for each class of vehicle registered in Missouri.

Table V shows the responsibility assigned to each registration class on a per vehicle basis.

1990

ESTIMATED VEHICLE RESPONSIBILITY
STATE SYSTEM

Passenger Cars	111	
Truck Gross Registered Weight	Local	Beyond Local
6,000# or less	87	106
6,001 - 12,000	112	115
12,001 - 18,000	146	276
18,001 - 24,000	240	454
24,001 - 30,000	320	1,226
30,001 - 36,000	208	915
36,001 - 42,000	281	946
42,001 - 48,000	269	1,116
48,001 - 54,000	318	1,537
54,001 - 60,010	260	1,320
60,011 - 66,000	527	2,917
66,001 - 72,000	669	---
Over 72,000	798	---
66,001 - 73,280	---	3,244
73,281 - 78,000	---	3,667
Over 78,000	---	4,033

TRAVEL BY REGISTRATION CLASS

Average vehicle miles traveled and registration fees vary between local and beyond local and for each registration class. Thus differences exist in both cost responsibility and revenue generation.

Various data sources are considered in developing the estimated miles of travel per vehicle. Present day methods of data sampling and projection available to the transportation analyst help to develop information with reasonably high statistical confidence.

Comparison of vehicle-miles of travel produces no particularly startling results. Trucks in the largest weight groups travel the farthest. This is to be expected because the transcontinental freight haulers are included in these groups. If we examine data for vehicles registered above 60,010 pounds, we find that trucks registered in this group represent less than three percent of the total truck registration, yet they account for 21.8 percent of the annual truck vehicle-miles of travel. In the broader picture, these trucks compose less than one percent of total vehicle registrations but travel over 6.9 percent of the total vehicle-miles per year.

V

REVENUE

HOW MUCH REVENUE?

Total state revenues for 1990 were $571 million. This was supplemented by $253 million of federal funds.

WHAT ARE REVENUE SOURCES?

State revenues are largely derived from license fees and fuel taxes. A significant amount also comes from miscellaneous fees, such as a portion of the sales tax on motor vehicles.

REGISTRATION FEES

Registration (or licensing) fees for passenger cars are established by "taxable horsepower". Trucks are registered in 16 weight groups or "classifications". These groups are further split between local and beyond local. Vehicles registered for "local" use are limited to travel within 25 miles of the municipality of registry. Farm vehicles hauling the owner's property are excepted from this restriction. There are no travel restrictions on vehicles possessing "beyond local" registration.

Revenue from registration fees paid by the 3.9 million vehicles amounted to $173.9 million in 1990. Fees from 344,600 trailers generated an additional $2.25 million.

MOTOR FUEL TAX

The state collects eleven cents per gallon for motor fuel sold for highway use in Missouri. By constitutional provisions, 15 percent of the collected tax is distributed to cities with over 100 population and 10 percent to counties. The remaining 75 percent is allocated to the operation of the state highway system.

Fuel consumption for highway use amounted to 3.25 billion gallons which produced $266 million for the state highway system in 1990.

Because of increasingly fuel-efficient motor vehicles, trends in fuel consumption have not paralleled the trends in vehicle miles traveled as they did a few years ago. Between 1985 and 1990 state system travel increased at an annual rate of 4.75 percent while fuel consumption increased at a 2.0 percent rate.

MISCELLANEOUS REVENUE

This is a catchall label for fees which generate state highway revenues but are not directly attributable to specific vehicles as are registration fees, nor to all vehicles as are fuel taxes. Nevertheless, they are user fees which generate a significant level of funding.

TABLE VI

1990 ANNUAL HIGHWAY REVENUES
State Share
($1,000)

Motor Vehicle License	$173,903
Motor Fuel Tax	266,067
Motor Vehicle Sales Tax	61,804
Motor Vehicle Use Tax	31,774
Motor Vehicle Inspection	2,310
Drivers License	12,094
Interest on Road Fund	5,028
Miscellaneous Receipts (Includes oversize and overweight permits, penalties, etc.)	18,456
	$571,436

TAX PAYMENT PER VEHICLE

Average annual payment per vehicle was developed from the registration fee, fuel tax and miscellaneous fee data.

Where the source is clearly related to a particular registration class or group of classes, the generated revenue is prorated to vehicles in that class or group. Where the source is unrelated to specific vehicle operation, such as drivers' license fees, the generated revenue is prorated to all vehicles. Thus, every effort is made to assure that the tax responsibility of each vehicle is properly allocated.

Again, it is emphasized that these estimates are related only to programs developed on the basis of current fee structures and do not reflect highway needs.

The 1990 state revenue from all these sources was $571 million.

State payments by passenger cars generate an average annual payment of $122. Average annual payments by trucks ranged from $93 for local trucks registered at or below 6,000 pounds to $3,247 for beyond local trucks registered at 80,000 pounds. Estimated 1990 payments per vehicle are shown in Table VII.

1990

ESTIMATED VEHICLE PAYMENTS
STATE SYSTEM

Passenger Cars	$ 122	
Truck Gross Registered Weight	Local	Beyond Local
6,000# or less	$ 93	$ 109
6,001 - 12,000	105	123
12,001 - 18,000	143	237
18,001 - 24,000	138	251
24,001 - 30,000	162	470
30,001 - 36,000	185	599
36,001 - 42,000	258	853
42,001 - 48,000	287	1,063
48,001 - 54,000	339	1,326
54,001 - 60,010	410	1,713
60,011 - 66,000	535	2,336
66,001 - 72,000	602	---
Over 72,000	735	---
66,001 - 73,280	---	2,768
73,281 - 78,000	---	3,062
Over 78,000	---	3,247

VI

COMPARISON OF USER RESPONSIBILITY AND TAX PAYMENTS

The key question is: Is each class of vehicle paying its fair share? This is why this study compares the cost responsibility of vehicles in each weight group with the revenues generated (payments). This comparison provides an indication of discrepancies and their magnitude between what the average vehicle in each weight group pays for the use of the state highway system versus the amount of the system "consumed" by the same vehicles.

Table VIII shows comparative values for payment and responsibility for each registration class. Figure 2 graphically depicts the comparisons for all classes of trucks.

The study indicated that passenger car payments are $30.2 million more than their responsibility ($11 per vehicle) while beyond local trucks registered over 66,010 pounds pay $18.8 million less than their responsibility ($760 per vehicle). Some lighter beyond local trucks and most heavier local trucks provide revenues in excess of their responsibility. The number of vehicles that overpay is large compared to the number that underpay. However, as shown in Table VIII, vehicles generally underpay at a more significant rate than those which overpay.

The results of this or other studies of a similar nature definitely establish trends which are not particularly sensitive to changes in some of the elements. On the other hand, specific values may be significantly altered if circumstances force a change in the elements to be funded. Thus, it is that we can say with confidence that some classes of vehicles pay less than their fair share of the cost of operating the highway system while other classes pay more than their fair share. The dollar value of such difference would however vary somewhat if the distribution of costs between the elements making up the total were significantly different. In this study, about three-fourths of the projected costs were allocated on some basis other than weight.

EQUIVALENT 18 THOUSAND POUND SINGLE AXLE LOAD (ESAL)

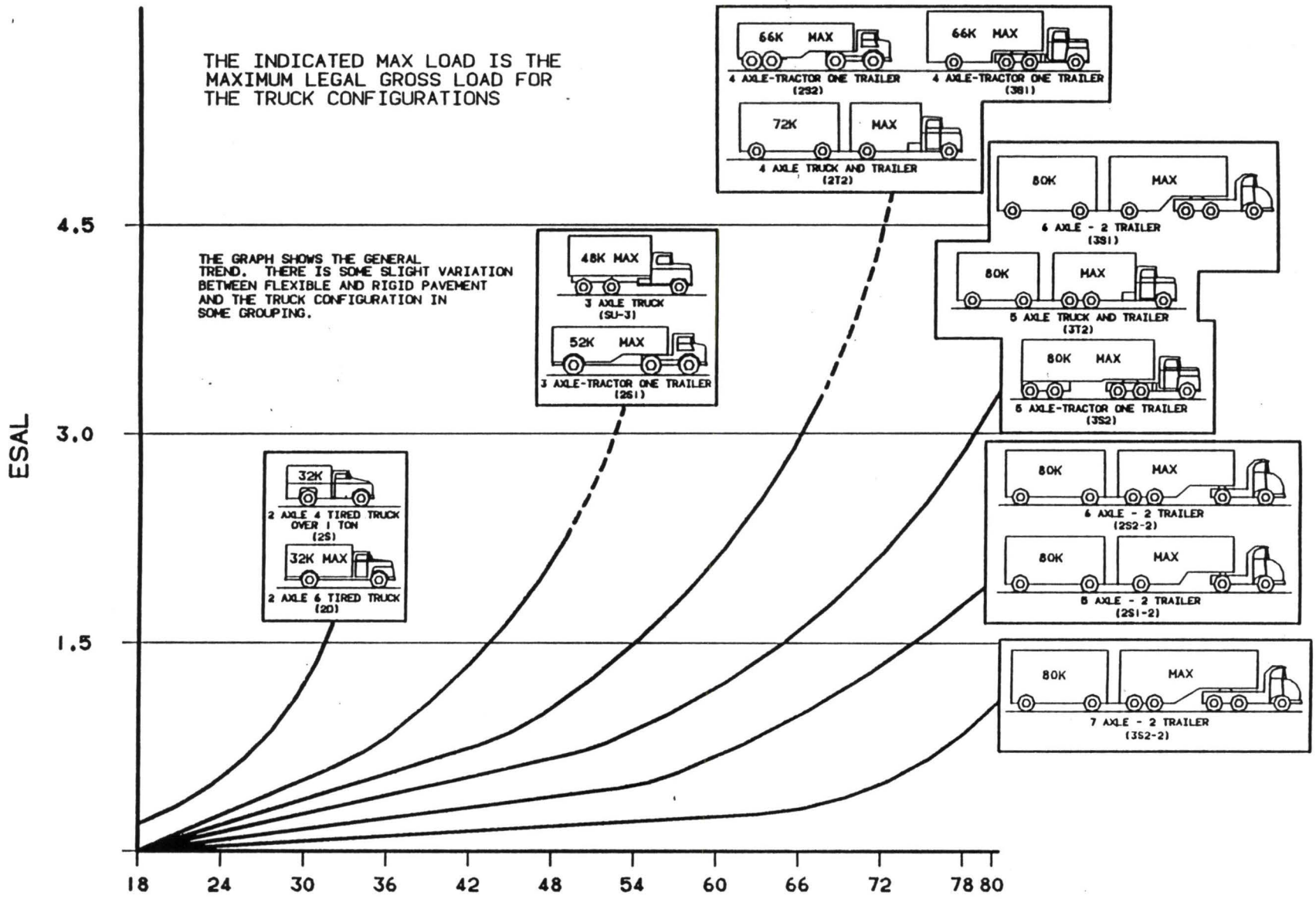

FIGURE 1

1990

COMPARISON OF ESTIMATED PAYMENT AND RESPONSIBILITY

	LOCAL			BEYOND LOCAL		
	STATE PAYMENT	STATE RESPONSIBILITY	PAYMENT VS. RESPONSIBILITY	STATE PAYMENT	STATE RESPONSIBILITY	PAYMENT VS. RESPONSIBILITY
Passenger Cars	$ 122	$ 111	$ 11			
Truck Gross Registered Weight						
6000# or less	$ 93	$ 87	$ 6	$ 109	$ 106	0
6,001 - 12,000	105	112	-7	123	115	8
12,001 - 18,000	143	146	-3	237	276	-39
18,001 - 24,000	138	240	-102	251	454	-203
24,001 - 30,000	162	320	-158	470	1,226	-756
30,001 - 36,000	185	208	-23	599	915	-316
36,001 - 42,000	258	281	-23	853	946	-93
42,001 - 48,000	287	269	18	1,063	1,116	-53
48,001 - 54,000	339	318	21	1,326	1,537	-211
54,001 - 60,010	410	260	150	1,713	1,320	393
60,011 - 66,000	535	527	8	2,336	2,917	-581
66,001 - 72,000	602	669	-67	---	---	---
Over 72,000	735	798	-63	---	---	---
66,001 - 73,280	---	---	---	2,768	3,244	-476
73,281 - 78,000	---	---	---	3,062	3,667	-605
Over 78,000	---	---	---	3,247	4,033	-786

ESTIMATED 1990 ANNUAL RESPONSIBILITY AND PAYMENT FOR THE STATE HIGHWAY SYSTEM

LOCAL & BEYOND LOCAL TRUCKS

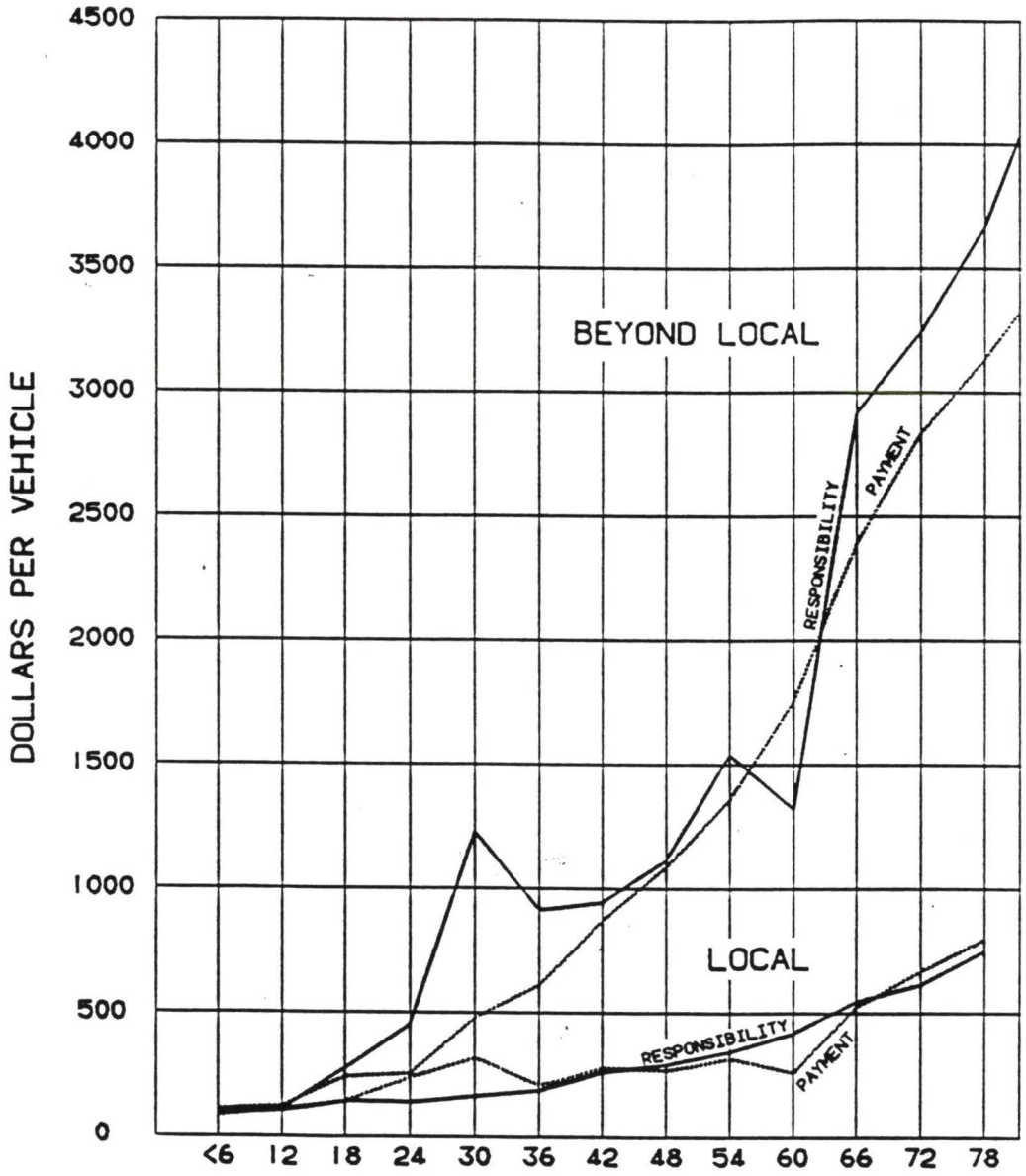

FIGURE 2