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85th Congress, 2d Session

A REPORT OF FACTORS FOR USE IN APPORTIONING FUNDS FOR THE NATIONAL SYSTEM OF INTERSTATE AND DEFENSE HIGHWAYS

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LETTER

FROM THE

SECRETARY OF COMMERCE

TRANSMITTING

AN ESTIMATE OF THE COST OF COMPLETING THE NATIONAL SYSTEM OF INTERSTATE AND DEFENSE HIGHWAYS IN EACH STATE AND THE DISTRICT OF COLUMBIA, PREPARED FOR THE PURPOSE OF APPOR-TIONING INTERSTATE SYSTEM FUNDS AUTHORIZED FOR THE FISCAL YEARS ENDING JUNE 30, 1960, 1961, AND 1962, PURSUANT TO SECTION 108 (d) OF THE FEDERAL-AID HIGHWAY ACT OF 1956



JANUARY 7, 1958.—Referred to the Committee on Public Works and ordered to be printed, with illustrations

> UNITED STATES GOVERNMENT PRINTING OFFICE WASHINGTON : 1958

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LETTER OF TRANSMITTAL

THE SECRETARY OF COMMERCE, Washington, D. C., January 7, 1958.

Hon. SAM RAYBURN.

Speaker of the House of Representatives, Washington, D. C.

DEAR MR. SPEAKER: In accordance with the requirements of section 108 (d) of the Federal-Aid Highway Act of 1956 (Public Law 627, 84th Cong.), I am transmitting herewith an estimate of the cost of completing the National System of Interstate and Defense Highways in each State and the District of Columbia prepared for the purpose of apportioning Interstate System funds authorized for the fiscal years ending June 30, 1960, 1961, and 1962.

The factors contained in this estimate of costs of construction are derived from analysis and summation of estimates of cost set forth in detail in 49 bound volumes of individual State reports which, although considered a part of this transmittal, are being sent directly to the House of Representatives Public Works Committee hearing room because of their size.

Making an estimate of this magnitude is a complex engineering job and requires exercise of sound judgment in forecasting probable highway needs of each State in the calendar year 1975. The basic elements of the job have been done in the individual State highway departments where there is available the largest collection of needed basic data, skills, and experience bearing on the highway problems of each State. These estimates, uniformly prepared under a common set of guides and engineering standards developed jointly by the Bureau of Public Roads and representatives of the State highway departments, represent the best coordinated judgment in this important matter.

In submitting this estimate I wish to recognize and pay tribute to the State highway departments, all of which have cooperated to the fullest in its preparation. This is but another working example of the fine relationship of cooperative endeavor which has historically characterized the Federal-aid highway program. In executing the program set out in these estimates it is of great importance that this State and Federal partnership be maintained and even strengthened wherever possible.

Although this estimate shows an increase in cost over the amounts authorized by section 108 (b) of the 1956 act, I do not see any need for consideration at the present time of new legislative measures which would add to the income of the highway trust fund. This is the first estimate of a series of five and is made in the early stage of the highway program launched by the 1956 act. As construction of the Interstate System progresses toward completion and as the amount of remaining work correspondingly decreases, future estimates of cost will_be made on a broader base of experience and these estimates will

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progressively become more accurate by reflecting actual trends in cost, either upward or downward, that cannot be forecast as well now. Until this additional experience is acquired, consideration of any adjustments in authorization of funds or revenues would be premature. I recommend it for approval by the Congress.

Sincerely yours,

SINCLAIR WEEKS, Secretary of Commerce.

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Conclusions

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A REPORT OF FACTORS FOR USE IN APPORTIONING FUNDS FOR THE NATIONAL SYSTEM OF INTERSTATE AND DEFENSE HIGHWAYS

PURPOSE OF REPORT

The Federal-Aid Highway Act of 1956, section 108 (d), requires the Secretary of Commerce to submit to the Congress within 10 days subsequent to January 2, 1958, an estimate of the cost of completing the National System of Interstate and Defense Highways.

The purpose of the estimate is to derive the ratio of cost of completing the Interstate System in each State to the cost of completing the system in all of the States to serve as a basis for apportioning funds authorized for the fiscal years 1960, 1961, and 1962. The 1956 act specified this method of apportionment in order to carry out its stated objective of completing the Interstate System simultaneously in all States.

The estimate presented herein is the first of a series to be submitted to the Congress in accordance with the 1956 act. Revised estimates must be submitted in January of 1962, 1966, 1967, and 1968, to establish the ratios for purposes of apportioning funds for the fiscal years 1963-69.

THE DESIGNATED SYSTEM COVERED BY THIS ESTIMATE

The National System of Interstate and Defense Highways, known as the Interstate System, was designated under authority given in the Federal-Aid Highway Act of 1944. This system was not to exceed 40,000 miles in total length and was to be located to connect by routes, as direct as practicable, the principal metropolitan areas, cities, and industrial centers, to serve the national defense, and connect at suitable border points with the routes of continental importance in the Dominion of Canada and the Republic of Mexico.

The Interstate System was selected by joint action of the State highway departments and the Bureau of Public Roads, and routes comprising an estimated 37,700 miles were designated on August 2, 1947. Additional routes limited to those around and through the urban areas, totaling an estimated 2,300 miles, were designated in September 1955. Pending the necessary engineering studies to determine the most economic alinements, the location of these routes was diagrammatic only, and for convenience and in the absence of detailed engineering studies, their lengths were measured along the existing principal highways.

Section 108 (1) of the 1956 act increased the authorized length of the Interstate System from 40,000 to 41,000 miles. Moreover, in developing the estimates for this report, the States found that by more accurate measurement and by the selection of better locations

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FUNDS FOR INTERSTATE AND DEFENSE HIGHWAYS

for the routes already designated, their previously estimated length would be reduced to approximately 38,548 miles.

On October 18, 1957, the Secretary of Commerce announced 2,102 miles of interstate routes expected to be added to the system. None of the cost of this mileage is included in the present estimate. The 1,000-mile expansion of the system is specifically excluded by section 108 (l) of the 1956 act, and the 1,102 miles of the savings made possible as a result of more direct locations became available subsequent to July 1, 1956, which is used as the base date for preparation of the cost estimate in this report.

Plate A shows the location of the designated routes which form the basis of this estimate. Table A shows the mileage of the Interstate System as well as the mileage of the other Federal-aid highway systems in each of the States.

	Mileages of Federal-aid highway systems				
State	Interstate	Other Federal-aid primary	Federal-aid secondary	Total	
Alabama	878	5, 238	16,971	23.08	
Arizona	1, 161	1,446	3, 777	6, 38	
Arkansas	522	3, 376	13, 745	17,64	
California	2, 135	5,047	10, 233	17.41	
Colorado	674	3, 592	3,850	8, 11	
Connecticut	275	989	1, 153	2, 41	
Delaware	40	5 26	1, 419	1, 98	
Florida	1, 111	4, 260	10, 726	16,09	
Georgia	1, 112	7, 267	13,005	21, 38	
(daho	611	2,440	4,620	7,67	
Illinois	1,608	8,902	10,868	21, 37	
Indiana	1,090	4, 355	15,837	21, 28	
[owa	709	9, 392	33, 137	43, 23	
Kansas	803	7, 179	22, 782	30, 76	
Kentucky	605	3, 804	15, 216	19, 62	
Louisiana	595	2, 566	7,730	10, 89	
Maine	313	1, 621	2, 299	4, 23	
Maryland	350	2,004	5, 973	8, 32	
Massachusetts	450	1, 723	2, 206	4, 37	
Michigan	1,066	5, 831	21, 732	28, 62	
Minnesota	888	7, 941	19, 317	28, 14	
Mississippi	676	4, 472	9, 487	14, 63	
Missouri	1,095	7,652	19, 365	28, 11	
Montana	1, 180	4, 687	4, 467	10, 33	
Nebraska	488	5, 165	13, 100	18, 75	
Nevada	534	1,656	2,486	4, 67	
New Hampshire	215	992	1, 590	2, 79	
New Jersey	368	1,670	1, 980	4,01	
New Mexico	1,003	3,013	5, 236	9, 25	
New York	1, 210	9, 563	19, 311	30, 08	
North Carolina	677	6, 173	24, 112	30, 96	
North Dakota	504	3,008	13, 531	17,04	
Ohio	1, 344	6, 422	16, 905	24, 67	
Oklahoma	784	7, 195	11, 747	19, 72	
Oregon	717	3, 305	5, 463	9, 48	
Pennsylvania	1, 435	6,035	13, 220	20, 69	
Rhode Island	71	392	384	84	
outh Carolina	679	3, 937	13, 396	18, 01	
South Dakota	512	4, 290	12, 383	17, 18	
Cennessee	988	4, 323	9, 735	15,04	
Texas	2, 889	14, 219	27,855	44, 96	
Jtah	634	1, 519	3, 359	5, 51	
/ermont	321	1, 237	1,804	3, 36	
/irginia	996	3, 683	18,034	22, 71	
Washington	613	2,974	9,648	13, 23	
West Virginia	207	2,370	10,671	13, 24	
Wisconsin	452	5,883	18,624	24, 9	
Wyoming	931 29	2,618	2, 124	5,67	
District of Columbia	29	112	78	21	
Hawaii Puerto Rico		532 550	602	1, 18	
			1,085	1, 63	
Total	38, 548	209, 146	528, 378	776, 07	

TABLE A.—Mileages of Federal-aid highway systems

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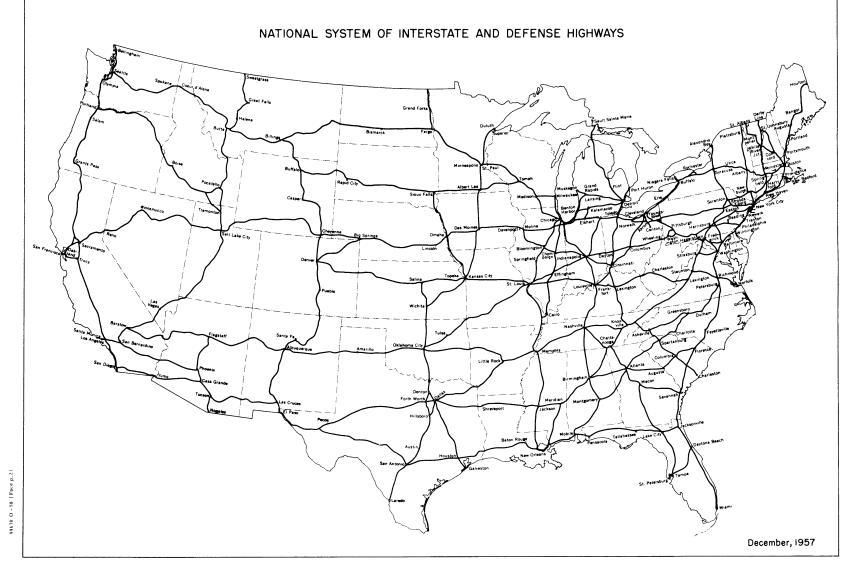


Plate A

UNIFORM APPLICATION OF GEOMETRIC AND CONSTRUCTION STANDARDS

Section 108 (i) of the 1956 act requires the geometric and construction standards for the Interstate System to be approved by the Secretary of Commerce in cooperation with the State highway departments, and that these standards shall be adequate for the types and volumes of traffic forecast for the year 1975. Appropriate committees composed of State highway department and Bureau of Public Roads engineers had been working for several years under sponsorship of the American Association of State Highway Officials in developing design standards for the Interstate System. The standards used in making the estimate reported herein were adopted by full membership vote of the American Association of State Highway Officials on July 12, 1956, and approved July 17, 1956, by the Commissioner of Public Roads acting for the Secretary of Commerce.

To serve as a standard guide, the Bureau of Public Roads, working with representatives from the State highway departments, prepared in October 1956 an Instruction Manual for Preparation and Submission of Detailed Estimate of the Cost of Completing the Interstate System in Accordance with Section 108 (d) of the Federal-Aid Highway Act of 1956.

This manual outlined in detail the procedures to be followed in preparation of the estimate. It was furnished to all State highway departments. An additional guide was prepared by the Bureau of Public Roads and furnished to the States to serve as a means of checking their forecasts of traffic. Since everyone working on the estimate was provided with the same guides, maximum uniformity has been obtained.

Uniformity as used here does not mean that the average cost of constructing a mile of road, or any other average factors, will be the same in all States. Such a comparison of averages is meaningless because of wide variations in conditions such as traffic, terrain, climate, and other factors peculiar to individual States and even within different portions of the same State.

Within the scope of practical uniformity there is a balance between traffic needs in a particular circumstance and the highway design used to satisfy that need. There are and should be provisions for some range and variation in design. These variations will include such things as widths of rights-of-way and the kind of improvements to be removed therefrom, pavement and subbase thickness, bridge foundations and types and the frequency and length of structures, number of traffic lanes, frequency and complexity of interchanges and grade separations, and many other elements involved under various local conditions. Uniformity in this sense, therefore, means the application in all of the States of the design range provided in the Geometric Design Standards approved for the Interstate System pursuant to section 108 (i) of the 1956 act.

PREPARATION OF THE ESTIMATE AND THE BASIC PRINCIPLES AND PROCEDURES FOLLOWED

The estimate of cost of completing the Interstate System was prepared in each State by personnel from the State highway departments and the division offices of the Bureau of Public Roads. Representa-

Digitized by UNIVERSITY OF MICHIGAN tives from both the Bureau's regional offices in the field and the headquarters office in Washington worked closely with the State and division office personnel in the preparation of the estimate. This procedure provided the close supervision necessary for a high level of uniformity.

Each State has compiled its estimate in a bound volume following a standard format for all States which includes maps showing the location of the several interstate routes in that State, plates showing the engineering features, and tables listing the design criteria, route and section mileages, and estimated costs for each section broken down into major elements of construction.

On June 29, 1956, when the 1956 act was approved, sections of the Interstate System were in various stages of development, ranging from the most elemental preliminary planning upward through completed sections already in use. In estimating the cost of completing the Interstate System in accordance with the adopted geometric and construction standards, all work in a financed status as of July 1, 1956, was considered as having been completed. This means that the cost of any work on the Interstate System, which was to be accomplished with funds already assigned for construction, has not been included in this estimate.

It was also necessary to insure the use of a common base period for the unit construction prices to be used in the estimate. Since all of the States would be working on their estimates in the early part of the calendar year of 1957, average cost indexes of construction for the last half of the calendar year of 1956 were selected. On completion of each State's estimate, it was forwarded through

On completion of each State's estimate, it was forwarded through the field offices of the Bureau of Public Roads and then to the Washington office where detailed checks, analyses, and summaries of the States' estimates have been made.

COST SUMMARIES AND APPORTIONMENT FACTORS

The data summarized in the following tables are derived from material presented in the 49 volumes of the reports.

Table B lists by States (1) the amounts of the unobligated balances as of July 1, 1956, of the Federal-aid interstate funds apportioned for the fiscal years 1954–57, inclusive, under the Federal-Aid Highway Acts of 1952 and 1954 with corresponding amounts of estimated State matching funds, (2) the amounts of interstate funds apportioned since July 1, 1956, for the fiscal years 1957–59, inclusive, under the Federal-Aid Highway Act of 1956 with corresponding amounts of estimated State matching funds, and (3) amounts for work expected to be financed with other than interstate and State matching funds. In order to comply with the intent of the 1956 act these amounts have been excluded from the cost figures to be used in establishing the factors for apportionment of funds authorized for the 1960 and later fiscal years.

Table C lists the estimates of cost by States for all work not financed as of July 1, 1956, which was required to complete the Interstate System. These costs are shown in three categories: (1) Preliminary engineering, (2) right-of-way, and (3) construction. The summation of the cost of these three elements of work less the total amounts shown in table B represent the remaining cost to complete the Interstate System. The ratio of this cost in each State to the sum of the costs in all the States determines the factors for apportionment of funds for the fiscal years 1960, 1961, and 1962.

Table D shows in summary the remaining cost in each State as described in table C and the resulting apportionment factor for each State.

TABLE B.—Amounts n	ot included	in costs	used to	determine	apportionment
		-Sec. 10			••

[Thousands of dollars]

		-			······	
State	Total of 1956 act inter- state appor- tionments 1957–59	Estimated State funds to match 1956 act funds for 1957–59	Balance as of July 1, 1956, of apportion- ments from 1952 and 1954 acts	Estimated State funds to match balance of 1952 and 1954 acts, interstate funds	Amounts for work ex- pected to be financed with other than inter- state and State match- ing funds	Total
Alabama. Arizona. Arizona. Arizona. Arkansas. California. Colorado. Connecticut. Delaware. Florida. Georgia. Idaho. Illinois. Indiana. Iowa. Kansas. Kansas. Kentucky. Louistana. Maine. Maryland. Massachusetts. Michigan. Michigan. Michigan. Michigan. Mississippi. Motana. Nebraska. New Jacks. New Jacks. New Mexico. New Mexico. New Mexico. North Carolina. North Dakota. Ohio. Oklahoma. Gregon. Pennsylvania. Rhode Island. South Carolina. South Dakota. Tennessee. Texas. Utah. Vermont.	$\begin{array}{c} 20, 313\\ 79, 578\\ 108, 923\\ 47, 578\\ 108, 923\\ 47, 578\\ 220, 986\\ 114, 014\\ 95, 407\\ 84, 911\\ 87, 817\\ 77, 250\\ 37, 702\\ 56, 377\\ 100, 122\\ 169, 006\\ 105, 801\\ 74, 354\\ 126, 728\\ 67, 166\\ 48, 932\\ 29, 313\\ 102, 673\\ 57, 024\\ 333, 824\\ 012\\ 63, 469\\ 251, 152\\ 229, 313\\ 63, 469\\ 251, 152\\ 229, 313\\ 63, 469\\ 251, 152\\ 229, 313\\ 63, 469\\ 251, 152\\ 229, 313\\ 63, 469\\ 251, 152\\ 229, 313\\ 63, 469\\ 251, 152\\ 229, 313\\ 63, 469\\ 251, 152\\ 229, 313\\ 63, 469\\ 251, 152\\ 270, 186\\ 45, 644\\ 28, 312\\ \end{array}$	$\begin{array}{c} 10, 614\\ 10, 614\\ 3, 191\\ 7, 545\\ 24, 475\\ 6, 088\\ 5, 020\\ 3, 257\\ 8, 842\\ 12, 102\\ 3, 975\\ 24, 554\\ 12, 668\\ 10, 601\\ 9, 435\\ 9, 757\\ 8, 583\\ 4, 189\\ 6, 264\\ 11, 125\\ 18, 778\\ 11, 756\\ 8, 261\\ 14, 081\\ 14, 081\\ 14, 081\\ 14, 081\\ 14, 081\\ 14, 081\\ 14, 081\\ 14, 081\\ 14, 081\\ 14, 081\\ 14, 081\\ 14, 081\\ 14, 081\\ 14, 081\\ 14, 081\\ 14, 081\\ 14, 081\\ 14, 081\\ 5, 760\\ 22, 265\\ 5, 228\\ 27, 906\\ 3, 257\\ 7, 003\\ 5, 266\\ 11, 104\\ 30, 021\\ 12, 248\\ 3, 257\\ 7, 033\\ 5, 266\\ 11, 104\\ 30, 021\\ 2, 448\\ 3, 257\\ 3, 2$	$\begin{array}{c} 2, 641 \\ 550 \\ 530 \\ 3, 985 \\ \hline \\ 2, 962 \\ 2, 266 \\ 2, 463 \\ 5, 570 \\ 2, 684 \\ 6, 352 \\ 6, 322 \\ 6, 332 \\ 3, 217 \\ 1, 564 \\ 1, 752 \\ 1, 541 \\ 2, 116 \\ 1, 752 \\ 1, 541 \\ 2, 116 \\ 1, 752 \\ 2, 787 \\ 3, 062 \\ 2, 787 \\ 4, 019 \\ 5, 235 \\ 1, 969 \\ 2, 120 \\ 6, 782 \\ 2, 205 \\ 5, 3111 \\ 4, 788 \\ 2, 761 \\ 3, 061 \\ 2, 577 \\ 4, 019 \\ 5, 235 \\ 1, 969 \\ 2, 120 \\ 6, 782 \\ 2, 205 \\ 5, 3111 \\ 4, 788 \\ 3, 061 \\ 2, 577 \\ 5, 110 \\ 3, 061 \\ 2, 577 \\ 10 \\ 8, 519 \\ 2, 102 \\ 3, 475 \\ 2, 102 \\ 3, 107 \\ 3, 475 \\ 2, 102 \\ 3, 246 \\ $	$\begin{array}{c} 1,761\\ 1,567\\ 2,657\\ 1,351\\ 1,975\\ 1,544\\ 1,642\\ 3,723\\ 1,198\\ 454\\ 5,609\\ 4,379\\ 2422\\ 2,634\\ 2,144\\ 1,037\\ 1,028\\ 1,411\\ 1,188\\ 1,858\\ 2,053\\ 2,043\\ 2,673\\ 3,626\\ 3000\\ 1,413\\ 4,521\\ 8,723\\ 3,626\\ 3000\\ 1,413\\ 4,521\\ 8,733\\ 3,541\\ 3,192\\ 2,941\\ 1,881\\ 3,192\\ 2,941\\ 1,881\\ 3,526\\ 2,112\\ 2,317\\ 1,195\\ 4,809\\ 583\\ 223\\ 1,526\\ 2,164\\ \end{array}$	10, 547 160 242, 217 1, 365 36, 376 49, 541 3, 584 327 370, 640 	$\begin{array}{c} 121,087\\57,812\\57,812\\82,097\\536,033\\75,271\\91,513\\85,911\\96,109\\130,645\\55,435\\617,306\\140,702\\194,289\\122,202\\194,289\\122,202\\194,289\\122,202\\194,289\\122,202\\194,289\\122,202\\194,289\\122,202\\194,289\\122,202\\194,289\\122,202\\194,289\\122,202\\194,289\\122,202\\194,289\\122,202\\194,289\\122,202\\194,289\\122,202\\194,289\\122,202\\194,289\\122,202\\194,289\\122,202\\194,289\\122,202\\194,289\\122,202\\194,289\\123,010\\143,205\\130,008\\123,068\\123,061\\301,603\\48,205\\36,377\\199,997\\190,997\\1$
Virginia Washington West Virginia. Wisconsin Wyoming District of Columbia. Total.	94, 722 75, 517 55, 756 106, 688 48, 697 29, 312 4, 690, 000	10, 525 7, 734 6, 195 11, 854 3, 733 3, 257 497, 269	3, 221 3, 021 4, 031 6, 752 1, 014 2, 120 146, 186	2, 183 1, 783 2, 688 4, 639 406 1, 413 94, 803	3, 673 377 1, 940, 474	91, 728 68, 670 130, 310 53, 850 36, 102 7, 368, 732

State	Preliminary engi- neering (surveys, detail plans, spec- ifications, con- tract documents)	Right-of-way	Construction	A mounts already available (table B)	Federal-aid and State matching funds required to complete system
Alabama	20, 939	93, 172	640, 841	121.087	633, 86
Arizona	24, 336	26,062	446, 507	57.812	439,09
Arkansas		29, 940	362,086	82,097	319, 17
California	242, 543	650, 722	2, 909, 128	536, 033	3, 266, 36
Colorado	10,658	20, 625	293, 051	75, 271	249,06
Connecticut	14, 104	84, 376	385, 046	91, 513	392, 01
Delaware	6,404	15, 989	176, 721	85, 911	113, 20
Florida		213, 769	690, 317	96, 109	832, 84
Georgia		83, 475	800, 892	130, 645	775, 56
Idaho		16,608	249, 182	55, 435	221, 63
Illinois		268, 765 136, 949	1, 926, 776 875, 113	617, 306 140, 705	1, 648, 26 927, 04
Indiana Iowa	9, 443	136, 949	364, 669	123, 101	927, 04 304, 99
Kansas		52, 983	319, 349	94, 951	287, 53
Kentucky		55, 559	586, 612	103, 931	564, 91
Louisiana		113, 821	799, 140	91, 194	849.04
Maine		8, 218	198, 346	48, 738	165, 35
Maryland	26, 619	126, 682	677, 538	106, 807	724,03
Massachusetts		196, 991	818, 951	158, 102	895, 06
Michigan	49, 366	321, 928	1, 086, 028	194, 289	1, 263, 03
Minnesota	26, 153	107, 888	594, 178	122, 202	606, 01
Mississippi	7, 596	28, 659	404, 549	87, 730	353, 07
Missouri	39, 340	158, 250	865, 266	145, 923	916, 93
Montana	18, 110	13, 701	414, 986	81, 398	365.39
Nebraska Nevada	9, 063 8, 785	31, 792 20, 754	242, 201 192, 297	84, 825 53, 776	198, 23 168, 06
New Hampshire	7,102	14, 925	195, 311	40, 686	176, 65
New Jersey	42, 321	245, 224	1, 124, 686	372,075	1, 040, 15
New Mexico	15, 231	26,604	405, 073	61, 886	385, 02
New York	82, 353	334, 098	2, 242, 593	1,067,022	1, 592, 02
North Carolina	7, 329	38, 869	268, 703	140, 572	174, 32
North Dakota	1, 223	8, 546	194, 743	62, 199	142, 31
Ohio	78, 586	520, 929	1, 728, 929	234, 591	2, 093, 85
Oklahoma	9, 517	31, 442	348, 910	97, 805	292,06
Dregon	7,043	103, 612	517, 494	71,014	557, 13
Pennsylvania	52,906	126, 676	1, 502, 894	371, 564	1, 310, 91
Rhode Island	7,408 11,028	40, 094 23, 855	135, 280 305, 686	33, 098 75, 818	149,68
outh Dakota	2, 373	5, 376	192,005	63, 608	264, 75 136, 14
Cennessee	33, 902	158,908	883, 469	123,061	952, 21
Texas.	52, 305	227, 847	1, 473, 702	301, 603	1, 452, 25
Jtah	14, 325	19, 328	315, 095	48, 205	300, 54
/ermont	8,668	12,822	317, 963	36, 377	303, 07
/irginia	60, 856	177, 643	1, 323, 516	199, 997	1, 362, 01
Washington	16, 736	103, 289	553, 679	91, 728	581, 97
West Virginia	18, 261	52, 581	400, 709	68, 670	402, 88
Wisconsin	15,017	55, 408	398, 450	130, 310	338, 56
Wyoming District of Columbia	10,806	4, 218	372, 891	53, 850	334, 06
Jistrict of Columbia	12, 063	77, 252	265, 394	36, 102	318, 60
Total					1 32, 142, 05

TABLE C.-National summary of estimated costs-Sec. 108 (d)

[Thousands of dollars]

 1 Estimated cost for apportionment of Interstate System funds for fiscal years 1960-62 (includes both Federal and State funds).

...

State	Costs	Apportion- ment factors	State	Costs	Apportion- ment factors
Alabama. Arizona. Arizona. Arkansas. California. Colorado. Connecticut. Delaware. Florida. Georgia. Idaho. Illinois. Indiana. Louisiana. Maryland. Maryland. Missori. Missouri.	$\begin{array}{c} 439, 093\\ 319, 170\\ 3, 266, 360\\ 249, 063\\ 362, 013\\ 362, 013\\ 362, 013\\ 362, 013\\ 362, 013\\ 363, 284\\ 9775, 563\\ 221, 635\\ 221, $	Percent 1.972 1.366 .993 10.162 .775 1.220 .352 2.591 2.413 .609 5.128 2.884 .949 .895 1.758 2.641 .514 2.2785 2.785 3.930 1.885 1.098 2.853	New Hampshire New Jersey New Mexico New York North Carolina Ohio Oklahoma Oregon Pennsylvania Rhode Island South Dakota Tennessee Texas Utah Vermont Virginia Washington West Virginia Wisconsin Wyoming District of Columbia	$\begin{matrix} 1, 592, 022\\ 174, 329\\ 142, 313\\ 2, 093, 853\\ 292, 064\\ 557, 135\\ 1, 310, 912\\ 149, 684\\ 264, 751\\ 136, 146\\ 953, 218\\ 1, 452, 251\\ 300, 543\\ 303, 076\\ 1, 362, 018\end{matrix}$	Percent 0,550 3,236 1,198 4,953 -,542 -,443 6,514 -,909 1,733 4,078 -,466 -,824 -,424 2,966 4,518 -,935 -,943 4,287 1,811 1,253 1,033 1,033 1,033 -,991
Montana Nebraska Nevada		1.137 .617 .523	Total	32, 142, 055	100.000

 TABLE D.—Estimated Federal-aid and State matching costs to complete the system

 and apportionment factors—Sec. 108 (d)

[Thousands of dollars]

COMPARISON OF PRESENT FINANCING WITH PRESENT ESTIMATE OF COST

After applying the deductions summarized in table B, the total estimated cost to be used in determining the apportionment factors for fiscal years 1960, 1961, and 1962 is shown in table C as \$32,142,055,-000. This amount includes approximately \$3,065,409,000 of State matching funds, leaving an estimated \$29,076,646,000 to be supplied from the highway trust fund for the 1960 and later fiscal years.

The Federal-Aid Highway Acts of 1954 and 1956 authorize a total of \$25.0 billions to be appropriated in specific amounts for each of the fiscal years 1957 through 1969 for the purpose of expediting the construction, reconstruction, or improvement of the Interstate System after July 1, 1956. Another \$2.6 billions in State funds would be needed to match these Federal funds at the matching ratios established by the legislation. Thus, the total for Federal and State financing that has been provided under these acts is \$27.6 billions, for the period following July 1, 1956.

By comparison, the total for Federal and State financing to complete the Interstate System after July 1, 1956, as summarized in this report is \$37.6 billions. Of this amount \$33.9 billions represents the Federal share and \$3.7 billions represents the States' matching share. A tabular comparison of the present financing that was provided by the 1954 and 1956 acts and the financing needs currently estimated in accordance with the 1956 act is given in the following table.

	Federal share (billions)	State match- ing share (billions)	Total (billions)
Current estimate of needed Federal aid - State matching money: For fiscal years 1957-59 (Federal funds already appor- tioned)	\$4. 875 29. 077	\$0.605 3.065	\$5. 480 32. 142
Total As provided by the 1954 and 1956 acts	33. 952 25. 000	3. 670 2. 645	37. 622 27. 645

Thus it is indicated from the estimates made in 1956-57 that the combined Federal-aid and required State matching finances needed after July 1, 1956, to complete the Interstate System would be about 37 percent greater than the amounts which have been authorized in the 1954 and 1956 acts.

CAUSES FOR THE INCREASED COST REFLECTED IN THIS REPORT

This estimate of cost for completing the Interstate System is higher than the amounts presently authorized because—

(1) The nationwide traffic forecasts for 1975 which were made subsequent to the 1956 act are 15 percent higher than previous forecasts, resulting in a need for more traffic lanes and other facilities. Construction required on the Interstate System by this additional traffic accounts for an estimated 5-percent increase in needed facilities.

(2) Section 116 (b) of the 1956 act states that it is "* * the intent that local needs, to the extent practicable, suitable, and feasible, shall be given equal consideration with the needs of interstate commerce." To serve local needs as required by the above portion of the act will require an estimated 63 percent more highway grade separations, interchanges, other structures, and additional frontage roads than had been considered in determining the amounts authorized by the 1956 act. This accounts for an estimated 15-percent increase in total work to be done.

(3) In addition, miscellaneous items such as utility adjustments, lighting, signing, and other incidentals account for some increase, probably aggregating another 3 percent.

(4) Highway construction costs of the Interstate System type have risen 12 percent during the interval between mid-1954 and the last half of 1956 as reflected by the Bureau's price index for Federal-aid highway construction and this increase is applicable to all items.

CONCLUSIONS

These estimates are an accurate appraisal of the cost in each State based on 1956 price levels but do not represent a commitment of funds to the location, design, or cost of individual projects to be undertaken on the Interstate System. Before any construction begins, every portion of the system covered by this estimate will be further investi-

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gated and studied by the Bureau of Public Roads and State highway department engineers in preparing the detailed designs, plans, and specifications, on which actual construction bids will be invited. It must be recognized that the estimate totals are based on current prevailing factors and carry no forecast of future trends, either upward or downward.

The estimated costs to be borne by the highway trust fund and State matching funds are considered adequate for the purposes described in this report. It is therefore recommended that the estimates and apportionment factors shown in table D be approved by the Congress by concurrent resolution, in order to permit the Secretary of Commerce to apportion the authorized funds for fiscal years 1960, 1961, and 1962 as soon as revenues in the trust fund are estimated to be sufficient as required by the provisions of the Federal-Aid Highway Act of 1956, and the Highway Revenue Act of 1956.

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