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95-46 HIGHWAY/TRANSIT PROPOSALS
(PART 3)

GOVERNMENT
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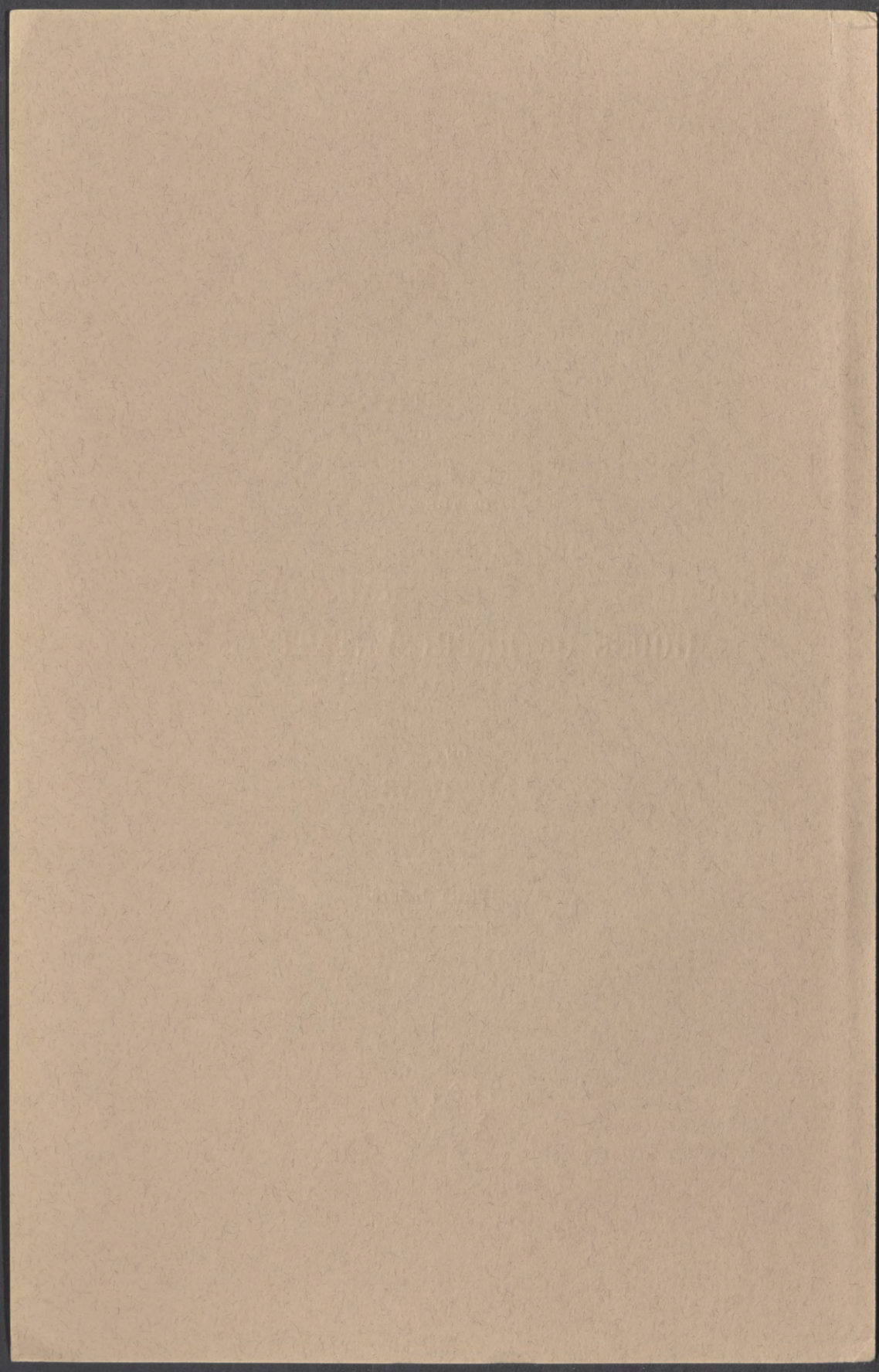
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HEARING
BEFORE THE
SUBCOMMITTEE ON SURFACE TRANSPORTATION
OF THE
COMMITTEE ON
PUBLIC WORKS AND TRANSPORTATION
HOUSE OF REPRESENTATIVES
NINETY-FIFTH CONGRESS
SECOND SESSION
ON
H.R. 10578
TO IMPROVE HIGHWAYS AND PUBLIC TRANSPORTATION

FEBRUARY 1, 1978

Printed for the use of the
Committee on Public Works and Transportation





HIGHWAY/TRANSIT PROPOSALS (PART 3)

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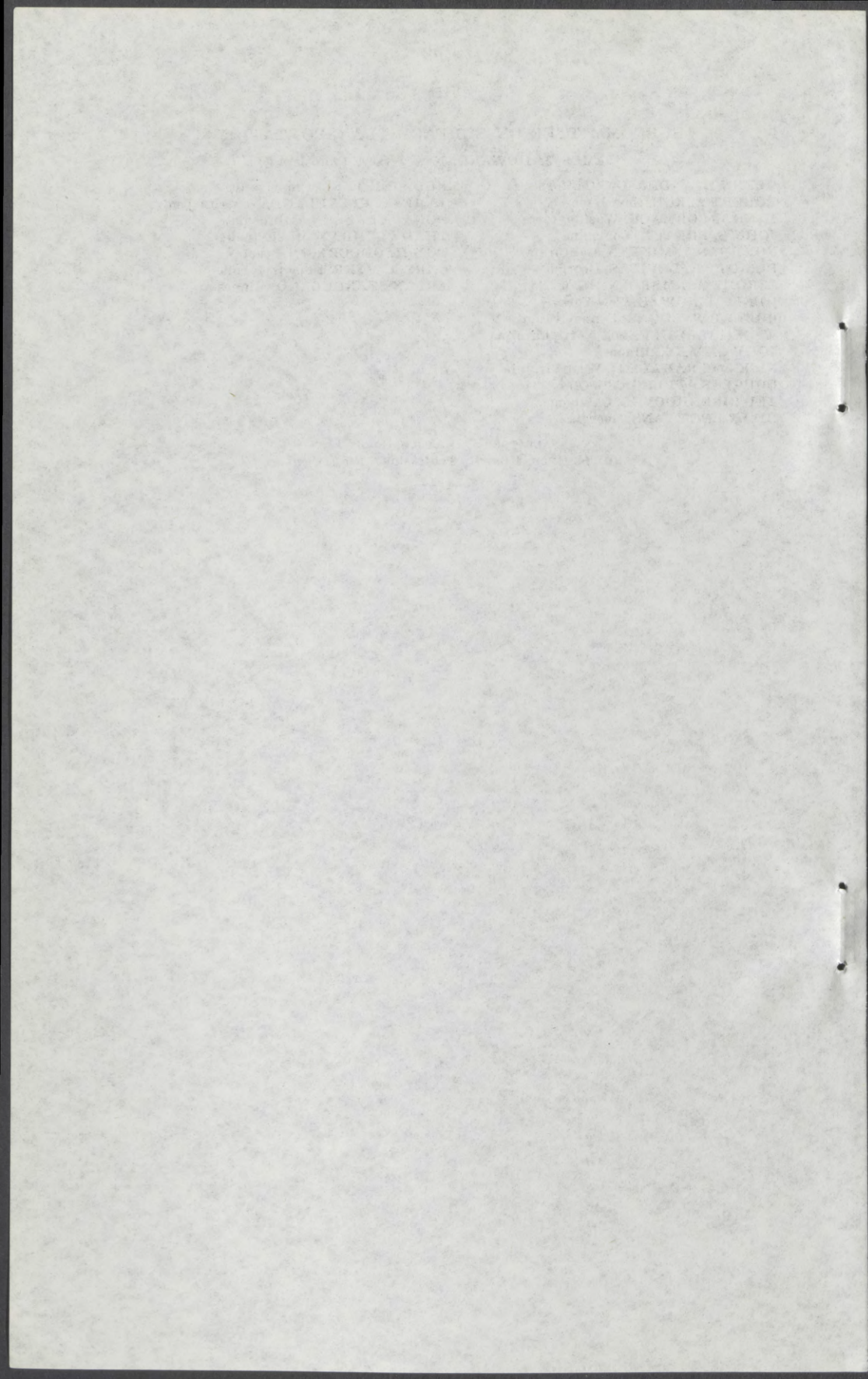
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95TH CONGRESS
2D SESSION

H. R. 10578

IN THE HOUSE OF REPRESENTATIVES

JANUARY 26, 1978

Mr. JOHNSON of California (for himself and Mr. HARSHA) (by request) introduced the following bill; which was referred jointly to the Committees on Public Works and Transportation and Ways and Means

A BILL

To improve highways and public transportation.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*
3 That this Act may be cited as the "Highway and Public
4 Transportation Improvement Act of 1978".

TITLE I

AUTHORIZATIONS AND APPORTIONMENT

7 SEC. 101. Unless otherwise explicitly indicated, any ref-
8 erence in this Act to a section, subsection, or paragraph shall
9 refer to title 23 of the United States Code.

(1)

1 REVISION OF AUTHORIZATION FOR APPROPRIATIONS FOR
2 THE INTERSTATE SYSTEM

3 SEC. 102. Section 108 (b) of the Federal-Aid Highway
4 Act of 1956, as amended, is amended (1) by inserting in
5 the first sentence after the words "subsection (d) of section
6 103 of title 23, United States Code," the following words:
7 "and for carrying out highway assistance substitution proj-
8 ects under section 103 (e) (4) of title 23, United States
9 Code," and (2) by striking out "\$3,625,000,000 wherever
10 it appears and by inserting in lieu thereof "\$3,500,000,000".

11 AUTHORIZATION FOR USE OF COST ESTIMATES FOR
12 APPORTIONMENT OF INTERSTATE FUNDS

13 SEC. 103. The Secretary of Transportation shall appor-
14 tion the sums authorized to be appropriated for expenditure
15 on the National System of Interstate and Defense Highways
16 for fiscal year 1980 using the apportionment factors and fig-
17 ures as contained in revised table 5 of Committee Print
18 95-16 and table 9 of Committee Print 95-11 of the Com-
19 mittee on Public Works and Transportation of the House of
20 Representatives, and as modified by the amendment to sec-
21 tion 104 (b) (5) of title 23, United States Code, contained
22 in section 304 of this Act.

23 TITLE 23 AUTHORIZATIONS

24 SEC. 104. (a) For the purpose of carrying out the fol-
25 lowing provisions of title 23, United States Code, the fol-

1 lowing sums are authorized to be appropriated out of the
2 Highway Trust Fund:

3 (1) for the interstate resurfacing, restoring, and
4 rehabilitation program, in addition to any sums pre-
5 viously authorized, \$175,000,000 for fiscal year 1979;
6 \$175,000,000 for fiscal year 1980; \$275,000,000 for
7 fiscal year 1981; and \$275,000,000 for fiscal year 1982.

8 (2) for the Federal-aid primary system, \$1,500,-
9 000,000 for each of fiscal years 1979 and 1980; and
10 \$1,625,000,000 for each of fiscal years 1981 and 1982;

11 (3) for the urban highway program, \$700,000,000
12 for each of fiscal years 1979 and 1980; and \$750,-
13 000,000 for each of fiscal years 1981 and 1982;

14 (4) for the highway safety improvement pro-
15 gram, \$500,000,000 for each of fiscal years 1979 and
16 1980; and \$525,000,000 for each of the fiscal years 1981
17 and 1982;

18 (5) for bridge reconstruction and replacement
19 under section 144 of title 23, United States Code,
20 \$450,000,000 for each of fiscal years 1979 and 1980;
21 and \$500,000,000 for each of fiscal years 1981 and
22 1982;

23 (6) for forest highways, \$49,000,000 for each of
24 fiscal years 1979 through 1982; and

1 (7) for the control of outdoor advertising and junk
2 yard program, \$40,000,000 for each of fiscal years
3 1979 through 1982.

4 (b) (1) For the purposes of carrying out the small
5 urban and rural program of section 133 of title 23, United
6 States Code, the following sums are authorized to be appro-
7 priated out of the Highway Trust Fund: \$786,000,000 for
8 fiscal year 1979, \$796,000,000 for fiscal year 1980, \$856,-
9 000,000 for fiscal year 1981, and \$866,000,000 for fiscal
10 year 1982: *Provided*, That there shall be reimbursement to
11 the Highway Trust Fund from the General Fund of the
12 Treasury for any portion of the foregoing amounts as pro-
13 vided for in appropriations Acts expended on operating
14 expenses.

15 (2) For the purpose of reimbursing the Highway Trust
16 Fund in accordance with the preceding paragraph, such sums
17 as are necessary are hereby authorized to be appropriated.
18 Of the sum authorized for the small urban and rural pro-
19 gram for each fiscal year \$6,000,000, \$7,000,000, \$7,000,-
20 000, and \$8,000,000 for fiscal years 1979, 1980, 1981, and
21 1982, respectively shall not be apportioned. Such authorized
22 sum not apportioned shall be available for obligation in the
23 same manner and to the same extent as the other sums av-

1 portioned under this paragraph and only for the purpose of
2 carrying out section 215 of title 23, United States Code.

3 TITLE II

4 EXTENSION OF HIGHWAY TRUST FUND AND CERTAIN
5 RELATED PROVISIONS

6 HIGHWAY TRUST FUND

7 SEC. 201. (a) Subsections 209 (c) and (f) of the
8 Highway Revenue Act of 1956 (relating to the Highway
9 Trust Fund; 23 U.S.C. 120 note) are amended by—

10 (1) striking out "1979" each place it appears and
11 inserting in lieu thereof "1983"; and

12 (2) striking out "1980" each place it appears
13 and inserting in lieu thereof "1984".

14 (b) Section 209 (e) (1) of such Act is amended by
15 striking out "September 30, 1980" and inserting in lieu
16 thereof "September 30, 1984".

17 TRANSFER FROM LAND AND WATER CONSERVATION FUND

18 SEC. 202. Section 201 of the Land and Water Conser-
19 vation Fund Act of 1965 (16 U.S.C. 4601-11) is
20 amended by—

21 (1) striking out "1979" and inserting in lieu
22 thereof "1983"; and

1 (2) striking out "1980" each place it appears and
2 inserting in lieu thereof "1984".

3 POSTPONEMENT OF CERTAIN EXCISE TAX REDUCTIONS

4 SEC. 203. (a) The following provisions of the Internal
5 Revenue Code of 1954 are amended by striking out "1979"
6 each place it appears and inserting in lieu thereof "1983":

7 (1) section 4041 (c) (3) (relating to the rate of
8 tax on fuel for noncommercial aviation) ;

9 (2) section 4041 (e) (relating to rate reduction) ;

10 (3) section 4061 (a) (1) (relating to imposition
11 of tax on trucks, etc.) except this provision shall not
12 apply in the case of any automobile bus chassis or auto-
13 mobile bus body ;

14 (4) section 4061 (b) (1) (relating to imposition of
15 tax on parts and accessories) ;

16 (5) section 4071 (d) (relating to imposition of tax
17 on tires and tubes) ;

18 (6) section 4081 (b) (relating to imposition of tax
19 on gasoline) ;

20 (7) section 4481 (a) (relating to imposition of tax
21 on use of highway motor vehicles) ;

22 (8) section 4481 (e) (relating to period tax in
23 effect) ;

24 (9) section 4482 (c) (4) (defining taxable
25 period) ;

1 (10) section 6156 (e) (2) (relating to installment
2 payments of tax on use of highway motor vehicles) ; and

3 (11) section 6421 (h) (relating to tax on gasoline
4 used for certain nonhighway purposes or by local transit
5 systems) .

6 (b) Section 6412 (a) (2) of such Code (relating to floor
7 stocks refunds) is amended by—

8 (1) striking out “1979” each place it appears and
9 inserting in lieu thereof “1983”; and

10 (2) striking out “1980” each place it appears and
11 inserting in lieu thereof “1984”.

12 TITLE III

13 INTERSTATE TRANSFERS

14 SEC. 301. Section 103 (e) (4) is amended by—

15 (1) adding the following sentence after the second
16 sentence thereof: “Substitute projects under this para-
17 graph may not receive approval, as prescribed by the
18 Secretary, after September 30, 1984.”;

19 (2) deleting the existing third and fourth sentences
20 and inserting in lieu thereof the following: “The Fed-
21 eral share of obligations incurred after September 30,
22 1978, for substitute projects shall be that provided in
23 section 120 (c) of this title.”;

24 (3) deleting the existing sixth, seventh, eighth,
25 and ninth sentences and inserting the following in sub-

1 stitution: "There are hereby authorized to be appropri-
2 ated out of the general fund of the Treasury such sums
3 as are necessary for public transportation projects sub-
4 stituted pursuant to this paragraph. Annual appropria-
5 tions for such projects shall be limited as provided in
6 section 4 (h) of the Urban Mass Transportation Act of
7 1964, as amended. Obligations incurred after the date
8 of enactment of this sentence under this paragraph for
9 highway projects substituted as a consequence of with-
10 drawals made after May 5, 1976, shall come from sums
11 apportioned to the State under section 104 (b) (5) (A)
12 of this title. Unobligated apportionments for the Inter-
13 state System under section 104 (b) (5) (A) in any
14 State where a withdrawal is approved under this para-
15 graph shall, on the date of such approval, be reduced
16 in the proportion that the amount made available as
17 a consequence of such withdrawal for the Federal share
18 of the cost of a substitute public transportation project,
19 as determined by the Secretary, bears to the Federal
20 share of the total cost of all Interstate routes in that
21 State as reflected in the latest cost estimate approved
22 by the Congress." and

23 (4) adding the following sentences at the end of
24 the paragraph: "After the date of enactment of this
25 sentence, the Secretary may not redesignate any mileage

1 as part of the Interstate System as a consequence of any
2 withdrawal made pursuant to this paragraph. The un-
3 obligated balance of contract authority established in the
4 Urban Mass Transportation Administration pursuant to
5 section 103 (e) (4) of title 23, United States Code, shall
6 not be available for obligation after September 30, 1978,
7 and shall lapse on September 30, 1980. There is hereby
8 authorized to be appropriated an amount equal to the
9 amount which would so lapse. Of this amount, such sums
10 as are necessary for highway projects shall be allocated
11 at the time a highway substitute project is selected to the
12 States which requested the withdrawal. This amount
13 shall be paid out of the Highway Trust Fund, and shall
14 be available for obligation subject to all of the provisions
15 of chapter 1 of this title applicable to highways on
16 the Interstate System, except the requirement that these
17 highways be on the Interstate System and any other
18 provisions determined by the Secretary to be inconsis-
19 ent with this section.”.

20 CUTOFF DATE

21 SEC. 302. Section 103 is further amended by adding
22 the following new subsection:

23 “(i) (1) After September 30, 1982, the Secretary may
24 not approve (A) any interstate project pursuant to sec-
25 tion 106 of this title (except pursuant to section 139 of

1 this title or relating to toll roads) unless the environmental
2 impact statement (EIS) process for the project, as required
3 by the National Environmental Policy Act, has been com-
4 pleted or (B) any withdrawal pursuant to subsection (e)
5 (4) of this section. Immediately after this date, the Secre-
6 tary shall remove from designation as part of the Interstate
7 System each route or portion thereof of such system for which
8 no such process has been completed or withdrawal has been
9 made.

10 “(2) By September 30, 1986, all routes or portions
11 thereof on the Interstate System (for which the Secretary
12 finds that sufficient Interstate authorizations are available)
13 must be completed or under contract for construction and
14 construction must have commenced. Immediately after such
15 date, the Secretary shall remove from designation as part
16 of the Interstate System each route or portion thereof of
17 such system not complying with this paragraph.”.

18 INTERSTATE RESURFACING (3R)

19 SEC. 303. (a) Chapter 1 is amended by adding the fol-
20 lowing new section:

21 “§ 119. Interstate System resurfacing

22 “Beginning with funds apportioned for fiscal year 1980,
23 the Secretary may approve projects for resurfacing, restoring,
24 and rehabilitating those lanes in use for more than five years
25 on the Interstate System (other than those on toll roads)

1 and constructed in whole or in part with funds apportioned
2 under subsections 104 (b) (4) and (5) of this title. Sums
3 authorized to be appropriated for this section shall be out
4 of the Highway Trust Fund and shall be apportioned in
5 accordance with section 104 (b) (5) (B) of this title and the
6 Federal share shall be that set forth in section 120 (a) of
7 this title.”.

8 (b) Section 104 (b) (5) (B) is amended to read as fol-
9 lows: “One-half in the ratio that lane miles in use for more
10 than five years on the Interstate System (other than those
11 on toll roads) and constructed in whole or in part with funds
12 apportioned under subsections 104 (b) (4) and (5) of this
13 title in each State bears to the total of all such lane miles in
14 all States; and one-half in the ratio that vehicle miles traveled
15 on lanes in use for more than five years on the Interstate
16 System (other than those on toll roads) and constructed in
17 whole or in part with funds apportioned under subsections
18 104 (b) (4) and (5) bears to the total of all such vehicle
19 miles in all States.

20 (c) Section 104 (e) is amended by inserting “(A)”
21 immediately after “(b) (5)” in the first and second sentences
22 thereof.

23 (d) The first sentence of section 104 (b) is amended
24 by deleting the words “except as provided in paragraphs
25 (4) and (5) of this subsection” and inserting in lieu there-

1 of: "except as provided in paragraphs (4) and (5) (A)
2 of this subsection".

3 (e) The analysis of chapter 1 of title 23, United States
4 Code, is amended by deleting

"119. Repealed."

5 and inserting in lieu thereof:

"119. Interstate System resurfacing."

6 ESSENTIAL GAPS

7 SEC. 304. (a) The first paragraph of section 104 (b)
8 (5) (A) is amended by:

9 (1) striking "1990" in the second full sentence and
10 substituting "1979" in lieu thereof; and

11 (2) adding the following after that sentence: "For
12 the fiscal years 1980 through 1990, one-half in the ratio
13 which the Federal share of the estimated cost to com-
14 plete the essential gaps in the Interstate System in each
15 State (as determined and approved in the manner pro-
16 vided in this paragraph) bears to the Federal share of
17 the total estimated cost to complete such gaps in all the
18 States; and one-half in the ratio which the Federal share
19 of the estimated cost to complete the Interstate System
20 and of completing highway projects (substituted as a
21 consequence of withdrawals approved after May 5, 1976,
22 pursuant to section 103 (e) (4) of this title) in such
23 State, as determined and approved in the manner pro-

1 vided in this paragraph, bears to the Federal share of
2 the sum of the estimated cost of completing the Inter-
3 state System and of completing such substitute highway
4 projects in all the States. Notwithstanding the preceding
5 sentence, no State (other than Puerto Rico) shall receive
6 less than one-half of 1 percent of each year's apportion-
7 ment. Whenever amounts made available under this sub-
8 section or the Interstate System in any State exceed the
9 estimated cost of completing that State's portion of the
10 Interstate System, the excess amount may be used by
11 that State for any purpose allowed under this title. For
12 the purpose of this section, the essential gaps are those
13 identified in the Interstate Gap Study, submitted by the
14 Secretary of Transportation to the Congress in accord-
15 ance with section 102 (b) (2) of the Federal-Aid High-
16 way Act of 1976."

17 (b) Section 104 is amended by adding the following
18 new paragraph at the end thereof:

19 “(h) All of that portion of the apportionment made to
20 each State for each of the fiscal years 1980 through 1990
21 pursuant to subsection (b) (5) (A) and based on the esti-
22 mated cost to complete essential gaps on the Interstate Sys-
23 tem in that State shall be available for obligation only for
24 projects to complete the essential gaps in the Interstate
25 System, as defined in this section, and if any of that portion

1 is not obligated as prescribed in this sentence by the end of
 2 the fiscal year for which authorized, the sums not so ob-
 3 ligated shall be available to the Secretary for reallocation to
 4 any other State in accordance with the provisions of the third
 5 sentence of section 118 (b) of this title.”.

6 (c) Section 101 (b) is amended by deleting the follow-
 7 ing from the third sentence thereof: “, and that the entire
 8 system in all States be brought to a simultaneous
 9 completion.”.

10 INTERSTATE COST ESTIMATES

11 SEC. 305. Section 104 (b) (5) (A) is amended by (a)
 12 inserting immediately after “September 30, 1980” the fol-
 13 lowing: “except effective with the apportionment for fiscal
 14 year 1981, the Secretary shall revise the cost estimate to
 15 include an estimate of completing the essential gaps in the
 16 Interstate System as defined in this section and of completing
 17 highway projects substituted as a consequence of withdrawals
 18 approved after May 5, 1976, pursuant to section 103 (e) (4)
 19 of this title and shall make the apportionment as provided
 20 above”; and

21 (b) Inserting after the words “then designated Inter-
 22 state System” in the nineteenth sentence and thereafter
 23 wherever these words appear in the paragraph: “and a
 24 revised estimate of the cost of completing the essential gaps
 25 in the Interstate System as defined in this section and of

1 completing highway projects substituted as a consequence
2 of withdrawals approved after May 5, 1976, pursuant to
3 section 103 (e) (4) of this title".

4 ADVANCES

5 SEC. 306. Section 115 is amended by adding the fol-
6 lowing new subsection at the end thereof:

7 " (d) When a State has obligated all funds available to
8 it for the Interstate System in any fiscal year other than an
9 amount which, by itself, is insufficient to pay the Federal
10 share of the cost of a project on the Interstate System that
11 has been submitted by such State to the Secretary for ap-
12 proval pursuant to section 106 of this title, the State may
13 further obligate an additional amount for the Interstate proj-
14 ect no greater than that which will be apportioned to the
15 State in the following fiscal year as determined by the Secre-
16 tary. Determination of apportionment for the following fiscal
17 year pursuant to this subsection shall be based upon the
18 revised estimate of the cost of completing the Interstate
19 System, but if such an estimate is not available for the year
20 requested, the Secretary may make the determinations based
21 upon the most current estimate with appropriate adjust-
22 ments. In considering applications pursuant to this subsec-
23 tion, the Secretary shall give priority to applications regard-
24 ing essential gaps, as defined in section 104 of this title. If
25 a State chooses to obligate a sum pursuant to this subsection,

1 an amount equal to that sum shall be subtracted from the
2 State's apportionment in the following fiscal year."

3 AVAILABILITY OF SUMS APPORTIONED

4 SEC. 307. Section 118 (b) is amended by striking the
5 second and third sentences and inserting in lieu thereof the
6 following sentences: "Except as provided in this subsection,
7 sums apportioned for the Interstate System in any State
8 shall remain available for expenditure in that State for the
9 Interstate System until the end of the fiscal year for which
10 authorized. The Secretary at any time thereafter may make
11 available such sums not obligated within the time period
12 prescribed by the preceding sentence to any other State
13 applying for such funds for the Interstate System, if the
14 Secretary determines that the applicant is willing and able to
15 (1) obligate the funds within one year of the date the funds
16 are made available; (2) apply them to a ready-to-commence
17 project; and (3) for construction work, begin work within
18 ninety days of obligation. Any funds allocated pursuant to
19 the preceding sentence and not used by a State in accord-
20 ance with the requirements of this subsection shall be avail-
21 able for reallocation by the Secretary in accordance with the
22 preceding sentence. In making any allocation pursuant to the
23 preceding two sentences the Secretary should give preference
24 to projects involving completion of essential gaps as defined
25 in section 104."

TITLE IV

DEFINITIONS

SEC. 401. Section 101 (a) is amended as follows:

(a) The definition of "apportionment" is amended by inserting the words " , section 133 or section 151" after the words "section 104".

(b) The definition of "construction" is amended by adding the following sentence at the end thereof: "The term also includes improvements which directly facilitate an effective vehicle weight enforcement program, such as scales (fixed and portable) , scale pits, scale installation, the scale house, and expenses incidental thereto."

(c) The definition of "Federal-aid highways" is amended to read as follows:

"The term 'Federal-aid highways' means highways constructed or reconstructed with the aid of Federal funds made available under this title."

(d) Following the definition of "Federal-aid highways", add the following definition:

"The term 'highway safety construction projects' means those projects which correct or improve high hazard locations, eliminate roadside obstacles, eliminate the hazards of railway-highway crossings, improve highway signing and pavement marking, install traffic control or warning devices at high accident potential locations, and other projects to

1 eliminate, reduce, or alleviate accidents or accident
2 potential.”.

3 (e) Following the definition of “Secretary”, add the
4 following definitions:

5 “The term ‘small urban area’ means an urban place as
6 designated by the Bureau of the Census having a population
7 of at least five thousand but less than fifty thousand and not
8 within any urbanized area, within boundaries to be fixed by
9 responsible State and local officials in cooperation with each
10 other, subject to approval by the Secretary. Such boundaries
11 shall as a minimum, encompass the entire urban place des-
12 ignated by the Bureau of the Census.

13 “The term ‘small urban and rural transportation project’
14 means a project for which the Federal share will be paid
15 from sums apportioned to the State under section 133 (a)
16 of this title.

17 “The term ‘urban highway project’ means a project for
18 which the Federal share will be paid from sums apportioned
19 to the State under section 104 (b) (6) of this title.”.

20 TRANSFERABILITY

21 SEC. 402. (a) Subsection 104 (c) is amended to read
22 as follows:

23 “(c) Up to 50 per centum of each amount apportioned
24 in any fiscal year to each State in accordance with each of
25 sections 104 (b) (1), 104 (b) (6), and 133 (a) may be

1 transferred from the apportionment under one such provi-
2 sion to the apportionments under the others if the transfer
3 is requested by the State highway department and is ap-
4 proved by the Governor of the State and the Secretary as
5 being in the public interest. Funds apportioned in accord-
6 ance with section 104 (b) (6) may not be transferred from
7 their allocation to any urbanized area of two hundred thou-
8 sand population or more under section 150 of this title with-
9 out the approval of the local officials of such urbanized area.”.

10 (b) Section 104 (g) is repealed.

11 (c) Section 104 (d) is repealed, and the remaining
12 subsections redesignated accordingly.

13 (d) Subsection 142 (a) (2) is amended to read as
14 follows: “In addition to projects under paragraph (1), the
15 Secretary may approve as a project, for payment from sums
16 apportioned under section 104 (b) (6) of this title, any pub-
17 lic transportation project which would be eligible for Federal
18 financial assistance under the provisions of the Urban Mass
19 Transportation Act of 1964, as amended: *Provided*, That
20 nothing in this subsection shall be considered to permit the
21 payment of operating expenses for public transportation
22 service.”.

23 FEDERAL SHARE PAYABLE

24 SEC. 403. (a) Section 120 is amended by—

25 (1) deleting the words “70 per centum” each time

1 they appear and inserting in lieu thereof the words "80
2 per centum";

3 (2) inserting the words "Interstate resurfacing, res-
4 toration, or rehabilitation, primary system, small urban
5 and rural highway, urban highway, or highway safety
6 improvement program" between the words "any" and
7 "project" in the first sentence of subsection 120 (a),
8 and deleting the words ", financed with primary, second-
9 ary, or urban funds, on the Federal-aid primary system,
10 the Federal-aid secondary system, and the Federal-aid
11 urban system" in that sentence;

12 (3) deleting subsection (d) and redesignating the
13 remaining subsections accordingly; and

14 (4) deleting the words "Subject to the provisions
15 of subsection (d), the" in subsections 120 (a), 120 (b),
16 and 120 (c) and inserting in lieu thereof the word
17 "The".

18 (b) Section 201 (f) and (h) of the Appalachian
19 Regional Development Act of 1965, as amended, is amended
20 by deleting the words "70 per centum" each time they
21 appear and inserting in lieu thereof the words "80 per
22 centum".

23 (c) The amendments made by subsections (a) and (b)
24 of this section shall take effect with respect to obligations
25 incurred after September 30, 1978.

1 PRIMARY SYSTEM

2 SEC. 404. (a) Sections 143, 147, and 320 of title 23
3 and sections 141 and 146 of the Federal-Aid Highway Act
4 of 1976 (Public Law 94-280) are repealed.

5 (b) The analysis of chapter 1 of title 23, United States
6 Code, is amended by deleting

"143. Economic growth center development highways."

8 and inserting in lieu thereof

"143. Repealed."

9 and by deleting

"147. Priority primary routes."

10 and inserting in lieu thereof

"147. Repealed."

11 (c) The analysis of chapter 3 of title 23, United States
12 Code, is amended by deleting

"320. Bridges on Federal dams."

13 and inserting in lieu thereof

"320. Repealed."

14 SMALL URBAN AND RURAL TRANSPORTATION ASSISTANCE

15 SEC. 405. (a) Chapter 1 of title 23, United States
16 Code, is amended by adding the following new section:

17 **"§ 133. Small urban and rural transportation assistance**

18 "(a) On October 1 of each fiscal year the Secretary,
19 after making the deduction authorized by subsection (g) of
20 this section, shall apportion the remainder of the sums au-
21 thorized to be appropriated for expenditure for small urban

1 and rural transportation assistance for that fiscal year to the
2 States in the following manner:

3 "One-fourth in the ratio which the area of each
4 State bears to the total area of all the States; one-half
5 in the ratio which the population of small urban and
6 rural areas of each State bears to the total population of
7 small urban and rural areas of all the States as shown by
8 the latest available Federal census; and one-fourth in
9 the ratio which the mileage of rural delivery and inter-
10 city mail routes where service is performed by motor
11 vehicles in each State bears to the total mileage of rural
12 delivery and intercity mail routes where service is per-
13 formed by motor vehicles in all the States, as shown by
14 a certificate of the Postmaster General, which the Post-
15 master General is directed to make and furnish annually
16 to the Secretary. No State (other than the District of
17 Columbia) shall receive less than one-half of 1 per cen-
18 tum of each year's apportionment.

19 "(b) Sums apportioned under this section shall be
20 available for obligation for a period of three years following
21 the close of the fiscal year for which such sums are appor-
22 tioned, and any amounts so apportioned remaining unobli-
23 gated at the end of such period shall lapse.

24 "(c) The Secretary may approve as a project in small
25 urban and rural areas any public transportation project,

1 including operating assistance, which would be eligible for
2 Federal financing assistance under the provisions of the
3 Urban Mass Transportation Act of 1964, as amended, or
4 any highway project, other than projects on the Federal-
5 aid primary or Interstate System. Financial assistance pro-
6 vided under this section shall be subject to such terms, con-
7 ditions, requirements, and provisions as the Secretary may
8 determine to be necessary or appropriate for the purposes
9 of this section. For public transportation projects such terms,
10 conditions, requirements, and provisions shall be similar to
11 those applicable to grants under sections 3 and 5 of the
12 Urban Mass Transportation Act of 1964, as amended, insofar
13 as the Secretary may deem them appropriate.

14 “(d) (1) The Federal share payable on account of any
15 highway project financed with sums apportioned under this
16 section shall be that provided in section 120 (a) of this title.

17 “(2) The Federal share payable on account of any
18 public transportation project, other than operating assistance,
19 financed with sums apportioned under this section shall not
20 exceed 80 per centum of the net project cost as defined in
21 section 4 (a) of the Urban Mass Transportation Act of 1964,
22 as amended. The Federal share payable on account of any
23 public transportation operating assistance project financed
24 with sums apportioned under this section shall not exceed

1 33 $\frac{1}{3}$ per centum of the total eligible operating expenses
2 incurred in the operation of public transportation services
3 assisted under this section. The Highway Trust Fund shall
4 be reimbursed from the general funds of the Treasury for
5 any sums expended pursuant to this section for any operating
6 assistance project.

7 “(e) At least 10 per centum of the sums apportioned
8 under this section to each State shall be used for public
9 transportation projects as set forth in subsection (c) of this
10 section: *Provided*, That, upon application by the State the
11 Secretary may waive such requirement if the Secretary finds
12 that a lower level of public transportation assistance is war-
13 ranted by the transportation needs of the small urban and
14 rural areas of such State.

15 “(f) The State may distribute funds to eligible recipients
16 within the State to carry out the purposes of this section.
17 Eligible recipients may include State agencies, local public
18 bodies and agencies thereof (including counties and Indian
19 tribes), nonprofit organizations, and operators of public
20 transportation services.

21 “(g) On October 1 of each fiscal year, the Secretary
22 shall set aside and make available 2 per centum of the sums
23 authorized to be appropriated for expenditure for small urban
24 and rural transportation assistance for that fiscal year, for
25 carrying out the purposes of section 502 of the Highway

1 and Public Transportation Improvement Act of 1978 relat-
2 ing to transportation planning.”.

3 (b) Paragraph (2) of subsection 104(b) is repealed.

4 (c) Subsection 117(f) (1) is amended to read as fol-
5 lows: “With respect to projects financed from funds appor-
6 tioned under section 133 of this title, in lieu of discharging
7 his responsibilities in accordance with subsections (a)
8 through (d) of this section, the Secretary may, upon request
9 of the State, discharge his responsibility relative to the plans,
10 specifications, estimates, surveys, contract awards, design,
11 inspection, and construction of all such projects by his re-
12 ceiving and approving a certified statement by the State
13 setting forth that the plans, design, and construction for each
14 such project are in accord with those standards and proce-
15 dures which (A) were adopted by the State, (B) were
16 applicable to projects in this category and (c) were approved
17 by the Secretary.”.

18 (d) Subsection 105(b) is amended to read as follows:
19 “In approving programs for small urban and rural trans-
20 portation projects, the Secretary shall require that such
21 projects be selected in accordance with the planning process
22 required pursuant to section 134 of this title.”.

23 (e) Sections 155 and 219 of title 23 and section 147 of
24 the Federal-Aid Highway Act of 1973, as amended, are
25 repealed.

1 (f) The analysis of chapter 1 of title 23, United States
2 Code, is amended by deleting

"133. Repealed."

3 and inserting in lieu thereof

"133. Small urban and rural transportation assistance.",

4 by deleting

"155. Access highways to public recreation areas on certain lakes."

5 and inserting in lieu thereof

"155. Repealed."

6 and by deleting

"219. Safer off-system roads",

7 and inserting in lieu thereof

"219. Repealed."

8 URBAN HIGHWAY PROGRAM

9 SEC. 406. (a) Section 104 (b) (6) is amended to read
10 as follows:

11 "(6) For highway projects in urbanized areas,
12 other than projects on the Federal-aid primary or Inter-
13 state Systems:

14 "In the ratio which the population in urban-
15 ized areas, or parts thereof, in each State bears to
16 the total population in such urbanized areas, or parts
17 thereof, in all the States as shown by the latest
18 available Federal census. No State shall receive less
19 than one-half of 1 per centum of each year's
20 apportionment."

1 (b) Chapter 1 of title 23, United States Code, is
2 amended by adding the following new section:

3 **"§ 146. Carpool and vanpool projects**

4 " (a) In order to conserve fuel, decrease traffic conges-
5 tion during rush hours, improve air quality, and enhance the
6 use of existing highways and parking facilities, the Secre-
7 tary may approve for Federal financial assistance from funds
8 apportioned under sections 104 (b) (1), 104 (b) (6), and
9 133 (a) of this title, projects designed to encourage the use
10 of carpools and vanpools. (As used hereafter in this section,
11 the term 'carpool' includes a vanpool.) Such a project may
12 include, but is not limited to, such measures as providing
13 carpooling opportunities to the elderly and handicapped,
14 systems for locating potential riders and informing them of
15 convenient carpool opportunities, acquiring vehicles appro-
16 priate for carpool use, designating existing highway lanes
17 as preferential carpool highway lanes, providing related
18 traffic control devices, and designating existing facilities for
19 use as preferential parking for carpools.

20 " (b) A project authorized by this section shall be sub-
21 ject to and carried out in accordance with all provisions of
22 this title, except those provisions which the Secretary deter-
23 mines are inconsistent with this section."

24 (c) Section 3 of the Emergency Highway Energy Con-
25 servation Act (Public Law 93-239), section 120 of the

1 Federal-Aid Highway Amendments of 1974 (Public Law
2 93-643), and section 143 of the Federal-Aid Highway Act
3 of 1976 (Public Law 94-280), are repealed.

4 (d) Section 137 is repealed.

5 (e) Section 142 (a) (1) is amended by inserting the
6 words "carpools and vanpools and" after the words "parking
7 facilities to serve".

8 (f) The analysis of chapter 1 of title 23, United States
9 Code, is amended by deleting

"146. Repealed."

10 and inserting in lieu thereof

"146. Carpool and vanpool projects.",

11 and by deleting

"137. Fringe and corridor parking facilities"

12 and inserting in lieu thereof

"137. Repealed."

13 (g) Part II of the Interstate Commerce Act is amended
14 by inserting the following words between the words "air-
15 craft;" and "nor" in subsection 303 (b) : "or (7b) vehicles
16 carrying up to 15 persons in a single daily round trip for the
17 purpose of commuting to and from work;".

18 (h) Subsection 13 (a) of the Fair Labor Standards
19 Act is amended by inserting before the period the following
20 words: "; or (16) any person participating in a voluntary
21 ridesharing arrangement for the transportation of up to 15

1 persons in a single daily round trip for the purpose of com-
2 muting to and from work”.

3 (i) Section 150 is amended to read as follows:

4 “(a) The funds apportioned to any State under section
5 104 (b) (6) of this title which are attributable to urbanized
6 areas having a population of 200,000 or more shall be
7 allocated among such urbanized areas within such State
8 for projects in programs approved under subsection (d) of
9 section 105 of this title in the ratio that the population within
10 each such urbanized area bears to the population of all such
11 urbanized areas, or parts thereof, within such State. At the
12 option of the State, allocation among such urbanized areas
13 may be made in accordance with a fair and equitable formula
14 developed by the State, which formula has been approved by
15 the Secretary. In the expenditure of funds allocated under
16 the preceding, fair and equitable treatment shall be accorded
17 incorporated municipalities of 200,000 or more population
18 within urbanized areas. The remaining funds apportioned
19 to any State under paragraph (6) of subsection (b) of sec-
20 tion 104 of this title available for expenditure in urbanized
21 areas having a population of less than 200,000 shall be
22 expended in such urbanized areas within such State for
23 projects in programs approved under subsection (d) of sec-
24 tion 105 of this title on a fair and equitable basis.

1 “(b) Notwithstanding any other provision of this title,
2 the funds that would otherwise be apportioned to any State
3 under section 104 (b) (6) of this title on or after October 1,
4 1979, that are attributable to an urbanized area of 1,000,-
5 000 population or more shall be apportioned to the recipient
6 or recipients designated by the Governor and appropriate
7 local officials of the urbanized area to receive such funds.
8 Expenditure of such funds shall be subject to all the require-
9 ments of this title except that with regard to such funds
10 the designated recipient shall have the responsibility and
11 authority vested in the State by this title and must have
12 adequate powers and be suitably equipped and organized to
13 discharge to the satisfaction of the Secretary the duties re-
14 quired by this title. Nothing in this section is intended to
15 preclude the State from being a recipient if agreed to by
16 the Governor and appropriate local officials.

17 “(c) Funds allocated to an urbanized area under the
18 provisions of this section may, upon approval of the local
19 officials of the area and the Secretary, be transferred to the
20 allocation of another such area in the State or to the State
21 for use in any urbanized area.”.

22 HIGHWAY SAFETY IMPROVEMENT PROGRAM

23 SEC. 407. (a) Section 151 is amended to read as
24 follows:

1 **“§ 151. Highway safety improvement program**

2 “(a) The Secretary shall establish a highway safety
3 improvement program for projects on any public road or
4 street in rural or urban areas. Assistance shall be available
5 under this program for highway safety construction projects,
6 as defined in subsection (a) of section 101 of this title; for
7 the implementation of highway-related safety requirements
8 and guidelines issued by the Secretary under section 402 of
9 this title; and for the development, implementation, and
10 evaluation of the highway safety improvement program
11 required under subsection (b) of this section.

12 “(b) Each State shall develop and implement on a
13 continuing basis a Highway Safety Improvement Program
14 including procedures for the selection, scheduling, construc-
15 tion, and evaluation of highway safety construction projects
16 on all highways, with the specific objective of reducing the
17 number and severity of highway traffic accidents. Each State
18 shall have a process for systematically identifying and locat-
19 ing hazardous highway locations, sections, and elements, in-
20 cluding roadside obstacles, on a continuing basis, methods
21 for assigning priorities to the various types of hazards iden-
22 tified, a process for the correction of identified safety needs
23 in accordance with the priorities developed, and a continuing
24 evaluation of the safety benefits obtained.

1 “(c) (1) The Federal share payable on account of any
2 project under this section shall be that provided in section
3 120 (a) of this title.

4 “(2) From funds apportioned to a State pursuant to
5 subsection (e) of this section:

6 “(A) Not less than 30 per centum of the funds shall
7 be provided for carrying out highway safety improve-
8 ments authorized under paragraph (a) of this section
9 off the Federal-aid system through an agency desig-
10 nated by the Governor, subject to the approval of the
11 Secretary.

12 “(B) Not less than 5 per centum of the funds shall
13 be provided for implementation of the highway-related
14 safety requirements and guidelines promulgated under
15 section 402 of this title through an agency designated by
16 the Governor, subject to the approval of the Secretary.
17 The unobligated balance of contract authority established
18 prior to enactment of this paragraph for carrying out
19 section 402 by the Federal Highway Administration
20 shall not be available for obligation after September 30,
21 1978, and shall lapse not later than September 30, 1980.

22 “(d) The Secretary is authorized to waive provisions
23 of title 23 deemed inconsistent with the purposes of this
24 section.

25 “(e) Funds authorized to be appropriated to carry out

1 this section shall be apportioned to the States as follows:
2 60 per centum in the ratio which the population of each
3 State bears to the total population of all States, and 40 per
4 centum in the ratio which the public road mileage in each
5 State bears to the total public road mileage in all States.

6 “(f) In any State wherein the State is without legal
7 authority to construct or maintain a project under this sec-
8 tion, such State shall enter into a formal agreement for such
9 construction or maintenance with the appropriate local
10 officials of the county or municipality in which such project
11 is located.

12 “(g) One-half of 1 per centum of funds authorized for
13 carrying out this section shall be apportioned to the Secre-
14 tary of the Interior, who shall exercise the responsibilities
15 assigned to States under subsection (b) of this section in
16 carrying out this section on Indian reservations. Such funds
17 shall be subject to a deduction of not to exceed 5 per centum
18 for the necessary costs of administering the provisions of this
19 section. Of the remainder, not less than 5 per centum shall
20 be expended by the Indian tribes to carry out the highway-
21 related safety requirements and guidelines issued by the
22 Secretary under section 402 of this title.

23 “(h) For purposes of this section, the term ‘State’ means
24 any one of the fifty States, the District of Columbia, Puerto
25 Rico, the Virgin Islands, Guam, and American Samoa.”

1 (b) Sections 152 and 153 are repealed.

2 (c) The analysis of chapter 1 of title 23 is amended by
3 deleting

"151. Pavement marking demonstration program."

4 and inserting in lieu thereof

"151. Highway Safety Improvement Program.",

5 by deleting

"152. Projects for high-hazard locations."

6 and inserting in lieu thereof

"152. Repealed.",

7 and by deleting

"153. Program for the elimination of roadside obstacles."

8 and inserting in lieu thereof

"153. Repealed."

9 RAILWAY-HIGHWAY CROSSINGS

10 SEC. 408. (a) Section 130 is revised to read as follows:

11 "(a) Each State shall conduct and systematically main-
12 tain a survey of all highways to identify those public railway
13 crossings which may require separation, relocation, or pro-
14 tective devices, and establish and implement a schedule of
15 projects for this purpose. At a minimum, this schedule shall
16 provide signs for all public railway-highway crossings.

17 "(b) The Secretary may approve projects for the elim-
18 ination of hazards of public railway-highway crossings, in-
19 cluding the separation or protection of grades at crossings,
20 the reconstruction of existing railroad grade crossing struc-

1 tures, and the relocation of highways to eliminate grade
2 crossings. The Federal share of these projects shall be paid
3 from funds apportioned in accordance with section 104 and
4 section 133 of this title. In addition, in any case when the
5 elimination of the hazards of a railway-highway crossing
6 can be effected by the relocation of a portion of a railway
7 at a cost estimated by the Secretary to be less than the cost
8 of elimination by one of the methods mentioned in the first
9 sentence of this section, the Secretary may approve such
10 project and the Federal share of the cost of the relocation
11 project may be paid from sums apportioned in accordance
12 with section 104 and section 133 of this title. The Federal
13 share of any railway-highway crossing project shall be that
14 provided in section 120 of this title.”.

15 (b) Section 203 of the Federal-Aid Highway Act of
16 1973, Public Law 93-87, as amended, is repealed.

17 EMERGENCY RELIEF

18 SEC. 409. The second sentence of subsection 125 (a)
19 is amended by—

20 (1) inserting the words “prior to the fiscal year
21 ending September 30, 1978,” immediately after “(2)”;
22 and

23 (2) inserting the following words before the pe-
24 riod at the end of the sentence: “, and for any fiscal
25 year thereafter, 100 per centum of such expenditures

1 are authorized to be appropriated out of the Highway
2 Trust Fund".

3 HIGHWAY BEAUTIFICATION

4 SEC. 410. (a) Section 131 is amended as follows:

5 (1) in subsection (b), by adding the words "and
6 section 133" after the words "section 104";

7 (2) in subsection (g), by deleting the words "75
8 per centum" and inserting in lieu thereof the words "80
9 per centum"; and

10 (3) by adding the following new subsection:

11 "(r) Funds authorized to be appropriated to carry out
12 this section shall be consolidated with the funds authorized
13 for control of junkyards pursuant to section 136 of this
14 title."

15 (b) Section 136 is amended as follows:

16 (1) in subsection (b), by adding the words "and
17 section 133" after the words "section 104";

18 (2) by deleting the words "75 per centum" in
19 subsections (i) and (j) and inserting in lieu thereof
20 the words "80 per centum"; and

21 (3) by adding the following new subsection:

22 "(n) Funds authorized to be appropriated to carry out
23 this section shall be consolidated with the funds authorized
24 for control of outdoor advertising pursuant to section 131 of
25 this title."

1 (c) The amendments made by subsections (a) (2) and
2 (b) (2) of this section shall take effect with respect to
3 obligations incurred after September 30, 1978.

4 SPECIAL BRIDGE REPLACEMENT AND REHABILITATION

5 PROGRAMS

6 SEC. 411. (a) Section 144 is amended by—

7 (1) revising the section heading to read: **“Special**
8 **bridge replacement and rehabilitation program”**;

9 (2) in subsections (a) and (h) deleting the words
10 “special bridge replacement program” and inserting in
11 lieu thereof the words, “special bridge replacement and
12 rehabilitation program”;

13 (3) in subsection (a) inserting the words “or re-
14 habilitate” between “to replace” and “bridges”;

15 (4) inserting in subsection (b) (1) after the words
16 “United States” the following: “and may at its option
17 inventory all bridges on or off a Federal-aid system, for
18 historic significance” and striking the period at the end
19 of subsection (b) and inserting in lieu thereof the words
20 “or rehabilitation.”;

21 (5) inserting in the first sentence of subsection (c)
22 the words “or rehabilitating” between “replacing” and
23 “a bridge”;

24 (6) striking the period at the end of the first sen-

1 tence of subsection (c) and inserting in lieu thereof the
2 words "or rehabilitation of the existing facility.";

3 (7) inserting after the first sentence of subsection
4 (c) the following new sentence: "In addition, States
5 may make application for assistance in replacing or
6 rehabilitating a bridge which is not on the priority sys-
7 tem established under subsection (b) of this section
8 and which is not on any of the Federal-aid systems,
9 and the Secretary may approve Federal participation
10 in the reconstruction of a comparable facility or rehabil-
11 itation of the existing facility: *Provided*, That not more
12 than 30 per centum of the funds authorized to be appro-
13 priated for the purpose of carrying out the provisions
14 of this section may be expended on such bridges.";

15 (8) in subsection (d), inserting the words "or
16 rehabilitation" between the words "replacement" and
17 "under" and striking the words "75 per centum" and
18 inserting in lieu thereof the words "80 per centum";
19 and

20 (9) in subsection (f), deleting the word "Funds"
21 and inserting in lieu thereof the words "Except as pro-
22 vided in subsection (c) of this section, funds".

1 (b) The analysis of chapter 1 of title 23, United States

2 Code, is amended by striking out:

"144. Special bridge replacement program."

3 and inserting in lieu thereof:

"144. Special bridge replacement and rehabilitation program."

4 (c) The amendment made by subsection (a) (8) of
5 this section with respect to the Federal share shall take
6 effect with respect to obligations incurred after Septem-
7 ber 30, 1978.

8 FEDERAL LANDS HIGHWAYS

9 SEC. 412. (a) Section 209 is repealed.

10 (b) The analysis of chapter 1 is amended by striking
11 out:

"209. Public lands highways."

12 and inserting in lieu thereof:

"209. Repealed."

13 (c) Section 101 (a) is amended as follows:

14 (1) The definition of the term "forest highway" is
15 amended to read as follows: "The term 'forest highway'
16 means a forest road under the jurisdiction of and maintained
17 by a public authority and open to public travel."

18 (2) The definition of the term "forest road or trail" is
19 amended to read as follows: "The term 'forest road or trail'

1 means a road or trail wholly or partly within or adjacent
2 to and serving the national forest system and which is nec-
3 essary for the protection, administration, and utilization of
4 the national forest system and the use and development of
5 its resources.”.

6 (3) The definition of the term “forest development
7 roads and trails” is amended to read as follows: “The term
8 ‘forest development roads and trails’ means a forest road or
9 trail under the jurisdiction of the Forest Service.”.

10 (4) The definition of the term “public lands highways”
11 is deleted.

12 (d) The proviso in section 120 (e) as redesignated
13 by section 403 of this Act is amended by striking the words
14 “public lands highways”.

15 (e) Section 125 (c) is amended by striking the words
16 “public lands highways,” therein.

17 (f) Section 201 is amended by deleting in the first
18 sentence the words “public lands highways,”.

19 (g) Section 202 (c) is amended to read as follows:
20 “The Secretary of the Department charged with the admin-
21 istration of such funds is granted authority to use such sums
22 as are necessary for transportation research and planning
23 from the sums authorized to be appropriated for forest high-
24 ways, forest development roads and trails, public lands de-

1 velopment roads and trails, park roads and trails, parkways,
2 and Indian reservation roads.”.

3 (h) Section 203 is amended (1) by striking in the
4 first sentence the words “Indian reservation roads, and
5 public lands highways” and inserting in lieu thereof the
6 words “and Indian reservation roads”; and (2) by striking
7 in the fourth sentence the words “Indian roads and public
8 lands highways” and inserting in lieu thereof the words
9 “and Indian roads”.

10 (i) Section 217 (c) is amended by striking the words
11 “Indian reservation roads, and public lands highways” and
12 inserting in lieu thereof the words “and Indian reservation
13 roads”.

14 (j) Section 308 (a) is amended by inserting the words
15 “transportation planning,” before the word “survey”.

16 TECHNICAL AMENDMENTS

17 SEC. 413. (a) Section 101 (c) is amended by deleting
18 the words “upon any Federal-aid system” following the
19 word “expenditure”.

20 (b) The second sentence of section 103 (e) (4) is
21 amended by deleting the words “section 103 of”.

22 (c) The second sentence of section 103 (f) is amended
23 by inserting the words “Interstate or primary” between the
24 word “No” and the words “Federal-aid system”.

1 (d) Section 104 (a) is amended as follows:

2 (1) by deleting the words "for expenditure upon
3 the Federal-aid system" each time they appear and
4 inserting in lieu thereof the words "for expenditure
5 under this title"; and

6 (2) by deleting the words "to be financed from
7 appropriations for the Federal-aid systems" and insert-
8 ing in lieu thereof the words "to be financed from the
9 appropriations".

10 (e) The first sentence of section 104 (b) is amended by
11 deleting the words "for expenditure upon the Federal-aid
12 systems" and inserting in lieu thereof the words "for ex-
13 penditure for the following highway assistance programs:".

14 (f) Section 104 (b) (1) is amended by deleting the
15 words "(including extensions in urban areas and priority
16 primary routes)" and inserting in lieu thereof the words
17 "(including extensions in urban areas)".

18 (g) Section 105 is amended as follows:

19 (1) in the first sentence of subsection (a) by de-
20 leting the words "for the Federal-aid systems" and by
21 inserting after the word "made" the words "under sec-
22 tions 104, 133, and 151 of this title";

23 (2) in the third sentence of subsection (a) by
24 placing a period after the word "part" and deleting the
25 remainder of the sentence;

1 (3) in subsection (d), by deleting the words "for
2 projects on the Federal-aid urban system" and inserting
3 in lieu thereof the words "for urban highway projects",
4 and by deleting the words "by the appropriate local of-
5 ficials with the concurrence of the State highway depart-
6 ment of such State and, in urbanized areas, also"; and
7 (4) in subsection (f), by deleting the words "on
8 the Federal-aid systems".

9 (h) Section 106 is amended as follows:

10 (1) in subsection (b) (1), by deleting the words
11 "the Federal-aid secondary system" and inserting in lieu
12 thereof the words "small urban and rural highway
13 projects";

14 (2) in subsection (b) (2) by deleting the words
15 "the Federal-aid urban system" and inserting in lieu
16 thereof the words "urban highway projects"; and

17 (3) in subsection (d), by deleting the words "on
18 any Federal-aid system".

19 (i) Section 108 is amended as follows:

20 (1) in subsection (a) by deleting the words "ac-
21 quisition of rights-of-way on any of the Federal-aid
22 highway systems, including the Interstate System," and
23 inserting in lieu thereof the words "acquisition of high-
24 way rights-of-way, including for the Interstate System,"
25 and by deleting the words "funds apportioned to any

1 State for expenditure on any of the Federal-aid highway
2 systems, including the Interstate System" and inserting
3 in lieu thereof the words "funds apportioned to any
4 State under sections 104 (b) and 133 (a) of this title";

5 (2) in subsection (c) (2), by deleting the words
6 "on any Federal-aid system"; and

7 (3) in subsection (c) (3), by deleting the words
8 "out of any Federal-aid highway funds apportioned to
9 the State in which such project is located and available
10 for obligation for projects on the Federal-aid system of
11 which such project is to be a part," and inserting in
12 lieu thereof the words "out of the appropriate category
13 of Federal-aid highway funds apportioned under section
14 104 (b) or section 133 (a) of this title to the State in
15 which such project is located and available for obliga-
16 tion,".

17 (j) Section 109 is amended as follows:

18 (1) in subsections (a), (h) and (i), by deleting
19 the words "on any Federal-aid system" each time they
20 appear;

21 (2) in subsection (c), by deleting the words
22 "Projects on the Federal-aid secondary system in which
23 Federal funds participate" and inserting in lieu thereof
24 the words "Small urban and rural highway projects";

25 (3) in the fifth sentence of subsection (i) by

1 deleting the words "on a Federal-aid system" and insert-
2 ing in lieu thereof "on a Federal-aid highway"; and

3 (4) in the fifth sentence of subsection (i), by
4 deleting the words "Sums apportioned for the Federal-
5 aid system on which such project will be located" and
6 inserting in lieu thereof the words "Sums apportioned
7 under section 104 (b) and section 133 (a) of this title".

8 (k) Section 112 (e) is amended by deleting the words
9 "projects on the Federal-aid secondary system".

10 (l) (1) Section 113 (a) is amended by deleting the
11 words "on the Federal-aid systems, the primary and second-
12 ary, as well as their extensions in urban areas, and the Inter-
13 state System, authorized under the highway laws providing
14 for the expenditure of Federal funds upon the Federal-aid
15 systems" and inserting in lieu thereof the words "receiving
16 Federal financial assistance under this chapter"; and

17 (2) Section 113 (b) is amended by deleting the words
18 "on any of the Federal-aid systems".

19 (m) Section 114 is amended by deleting the words
20 "located on a Federal-aid system" in the first sentence of
21 subsection (a) and inserting in lieu thereof the words "re-
22 ceiving Federal financial assistance under this chapter".

23 (n) Section 115 (a) is amended to read as follows:
24 "When a State has obligated all funds, other than for the
25 Interstate System, apportioned to it under section 104, sec-

tion 133 or section 151 of this title, whichever is applicable, and proceeds to construct any project without the aid of Federal funds, including one or more parts of any project, on other than on the Interstate System, in accordance with all procedures and all requirements applicable to the project under this title, except insofar as those requirements limit a State to the construction of projects with the aid of Federal funds previously apportioned to it, the Secretary, upon application by the State and approval of the application, is authorized to pay to the State the Federal share of the costs of construction of the project when additional funds are apportioned to the State under section 104 or section 133 of this title if the Secretary approves the plans and specifications of the project prior to its construction and the project conforms to the applicable standards adopted under section 109 of this title. The Secretary may not approve an application under this section unless an authorization is in effect for the fiscal year for which the application is sought beyond the currently authorized funds for the State, and an application will not be approved which will exceed the State's expected apportionment of the authorizations."

(o) Section 115 (c) is amended by inserting the words "and section 133" after the words "section 104".

(p) Section 116 is amended as follows:

(1) by deleting the last sentence of subsection (a) ;

1 (2) in subsection (b), by deleting the words "con-
2 structed on the Federal-aid secondary system, or within
3 a municipality" and inserting in lieu thereof the words
4 "constructed with Federal-aid funds"; and

5 (3) in the last sentence of subsection (c), by
6 deleting the words "for secondary or urban projects"
7 and inserting in lieu thereof the words "for projects,
8 other than projects on the Interstate or primary
9 system,".

10 (q) Section 117 (a) is amended by deleting the words
11 "projects on Federal-aid systems, except the Interstate
12 System" and inserting in lieu thereof the words "projects,
13 except projects on the Interstate System".

14 (r) Section 118 is amended as follows:

15 (1) in subsection (a), by deleting the words "to
16 each Federal-aid system or part thereof,";

17 (2) in the fifth sentence of subsection (b), by
18 deleting the words "apportioned to a Federal-aid sys-
19 tem" and inserting in lieu thereof the words "appor-
20 tioned under this title for each class of funds";

21 (3) in the last sentence of subsection (b), by
22 deleting the words "same class of funds, primary, sec-
23 ondary, urban, or interstate," and inserting in lieu there-
24 of the words "appropriate class of funds";

1 (4) in subsection (d), by deleting the words "on
2 a Federal-aid system"; and

3 (5) by deleting subsection (c) and redesignating
4 the following subsection accordingly.

5 (s) Section 120 (f), as redesignated by section 408
6 of this Act, is amended by inserting the words "or section
7 133" after the words "section 104".

8 (t) Section 121 (c) is amended by deleting the words
9 "located on a Federal-aid system and".

10 (u) Section 122 is amended by deleting the words "or
11 extensions of any of the Federal-aid highway systems in
12 urban areas" and inserting in lieu thereof the words "or for
13 urban highway projects", and by deleting the words "for
14 expenditure on such system" and inserting in lieu thereof
15 the words "for expenditure on such projects".

16 (v) (1) Section 123 (a) is amended by deleting the
17 words "a project on the Federal-aid primary or secondary
18 systems or on the Interstate System, including extensions
19 thereof within urban areas", and by inserting in lieu thereof
20 the words "a Federal-aid highway project".

21 (2) Section 123 is amended by adding a new section at
22 the end thereof as follows:

23 "(d) The term 'State', for purposes of this section,
24 includes recipients eligible for funds under this title."

1 (w) Section 124 is amended by deleting the words
2 "completion of projects on any of the Federal-aid systems,
3 including the Interstate System", and inserting in lieu thereof
4 the words "completion of Federal-aid projects".

5 (x) Section 129 is amended as follows:

6 (1) in subsection (c), by deleting the words "ex-
7 penditure on any of the Federal-aid highway systems,
8 including the Interstate System," and inserting in lieu
9 thereof the words "expenditure pursuant to this title";

10 (2) in subsection (f), by deleting the words "has
11 been approved under section 103 (b) or (c) of this
12 title as a part of one of the Federal-aid systems and";
13 and

14 (3) in subsection (g) (2), by deleting the words
15 "has been approved under section 103 (b) or (c) of
16 this title as a part of one of the Federal-aid systems
17 within the State and".

18 (y) Section 135 (b) is amended by placing a period
19 after the word "flow" and deleting the remainder of the
20 sentence.

21 (z) Section 140 is amended as follows:

22 (1) in the third sentence of subsection (a), by
23 deleting the words "on any of the Federal-aid systems";
24 and

1 (2) in subsection (b), by inserting the words "and
2 section 133 (a)" after the words "section 104 (b)".

3 (aa) Section 142 is amended as follows:

4 (1) in the first sentence of subsection (a) (1), by
5 deleting the words "the traffic capacity of the Federal-
6 aid systems" and inserting in lieu thereof the words
7 "traffic capacity", by deleting the words "on any
8 Federal-aid system", and by inserting the words "and
9 section 133 (a)" after the words "section 104 (b)", and

10 (2) in subsection (e) (2), by deleting the words
11 "applicable to projects in the Federal aid urban sys-
12 tem" and inserting in lieu thereof the words "applicable
13 to urban highway projects".

14 (bb) Section 149 is amended by deleting the words "a
15 project on any Federal-aid system" and inserting in lieu
16 thereof the words "a Federal-aid highway project".

17 (cc) Section 154 (c) is amended by inserting the words
18 "and section 133" after the words "section 104".

19 (dd) Section 217 (a) is amended by deleting the words
20 "paragraphs (1), (2), (3), and (6) of section 104 (b)"
21 and inserting in lieu thereof the words "sections 104 (b) (1),
22 104 (b) (6), and 133 (a)".

23 (ee) Section 302 (b) is amended by deleting the words
24 "construction of projects on the Federal-aid secondary sys-
25 tem, financed with secondary funds" and inserting in lieu

1 thereof the words "construction of small urban and rural
2 highway projects".

3 (ff) Section 304 is amended by deleting the words "the
4 Federal-aid highway systems" and inserting in lieu thereof
5 the words "Federal-aid highways".

6 (gg) Section 311 is amended by deleting the words
7 "subsection (b) of section 104" and inserting in lieu thereof
8 the words "sections 104(b) and 133(a)".

9 (hh) Section 321(b) is amended by deleting the words
10 "paragraphs (1), (2), (3), and (6) of section 104(b)"
11 and inserting in lieu thereof, the words "sections 104(b)
12 (1), 104(b) (6), and 133(a)."

13 RESEARCH AND PLANNING

14 SEC. 414. (a) Section 307 is amended—

15 (1) by revising subsection (a) to insert the follow-
16 ing before the period in the third sentence: ", and is
17 authorized to make grants for this purpose to the States
18 and local governments including, in urbanized areas, a
19 metropolitan planning organization designated by the
20 Governor";

21 (2) by revising subsection (c) to read as follows:
22 "(c) (1) Not to exceed 1 per centum of the sums appor-
23 tioned for each fiscal year beginning with the fiscal year
24 1979 under each of sections 104(b), 133(a), and 151 of
25 this title shall be available for expenditure upon request of

1 the State, with approval of the Secretary, for research and
2 development purposes, for State activities in the areas enu-
3 merated in subsection (a) of this section, including demon-
4 stration projects in connection with such purposes.

5 “(2) Sums made available under paragraph (1) of this
6 subsection shall be matched in accordance with section 120
7 of this title unless the Secretary determines that the interests
8 of the Federal program would be best served without such
9 matching.”.

10 (3) by amending the section heading to read
11 “RESEARCH”.

12 (b) The analysis of chapter 3 of title 23 is amended by
13 deleting

“307. Research and planning.”

14 and inserting in lieu thereof

“307. Research.”

15 (c) Section 104 (f) is amended to read as follows:

16 “(f) On October 1 of each fiscal year, the Secretary shall
17 set aside 2 per centum of the funds to be apportioned under
18 this section which shall be available for the purposes of
19 section 502 of the Highway and Public Transportation Im-
20 provement Act of 1978 relating to transportation planning,
21 except that, for the funds apportioned under (b) (5) (A)
22 of this section, the Secretary shall set aside and make avail-
23 able this per centum of such funds on October 1 of the year
24 preceding the fiscal year for which authorized.”.

1 AVAILABILITY OF SUMS APPORTIONED

2 SEC. 415. (a) The first sentence of subsection 118 (b)
3 is deleted and the following inserted in lieu thereof: "Sums
4 apportioned for Interstate resurfacing, the Federal-aid pri-
5 mary system, urban highway projects, small urban and rural
6 transportation projects, and the highway safety improve-
7 ment program shall continue available for obligation for a
8 period of three years after the close of the fiscal year for
9 which sums are authorized, and any amounts so apportioned
10 remaining unobligated at the end of such period shall lapse."

11 (b) The fourth sentence of section 118 (b) is repealed.

12 CATEGORICAL FUNDS AVAILABILITY

13 SEC. 416. Notwithstanding any other provision of law,
14 any unobligated balances of categories of Highway Trust
15 Fund funds apportioned or allocated under the provisions
16 of the Federal-Aid Highway Act of 1973, the Federal-Aid
17 Highway Amendments of 1974, and the Federal-Aid High-
18 way Act of 1976, for programs which have been eliminated
19 or consolidated under the provisions of this bill may at the
20 option of a State be transferred, with the concurrence of the
21 Secretary, to the related category of funds authorized by
22 this Act. The transferred funds shall be available in the same
23 manner as if they had been apportioned for the related cate-
24 gory, but the period of availability shall be determined based
25 on the original date of apportionment or allocation.

REORGANIZATION

1
2 SEC. 417. In order to provide for a more efficient and
3 orderly administration of the laws dealing with highways and
4 mass transportation, no later than September 30, 1979, the
5 Secretary of Transportation shall prepare a plan, in the man-
6 ner and to the extent he or she deems appropriate, to con-
7 solidate the Urban Mass Transportation Administration and
8 the Federal Highway Administration and other elements
9 of the Department into one surface transportation agency
10 within the Department of Transportation. After preparation,
11 the plan shall be transmitted to the President.

TITLE V

SHORT TITLE

12
13
14 SEC. 501. This title may be cited as the "Federal Public
15 Transportation Act of 1978".

FINDINGS AND PURPOSE

16
17 SEC. 502. (a) The Congress finds that:

18 (1) In the years since passage of the original Urban
19 Mass Transportation Act of 1964, there has been a mas-
20 sive Federal, State, and local effort to revitalize and ex-
21 pand the role of public transportation in this country.
22 While much has been done to improve our public trans-
23 portation services in these years, there is still a need to
24 continue the improvement and development of these
25 services to make them more efficient methods of trans-

1 porting people, and to maximize the potential role that
2 public transportation services can have on solving the
3 problems of energy conservation, urban development and
4 environmental preservation.

5 (2) A first step in this process is to foster more
6 efficient and effective use of our existing transportation
7 services and facilities through the expansion of a formula
8 grant program which will provide a continuous and
9 predictable flow of funds to help insure that services are
10 maintained.

11 (3) Existing programs must be utilized to broaden
12 the appeal and accessibility of public transportation to
13 all citizens, especially the transit dependent and the
14 elderly and handicapped.

15 (4) There exists a need to maximize the effective-
16 ness of our investments in fixed guideway facilities
17 through the analysis of alternative transportation invest-
18 ments and the identification of cost effective uses of
19 available Federal transportation funds.

20 (b) In addition to the purposes stated in the Urban
21 Mass Transportation Act of 1964, the purposes and goals
22 of the Federal public transportation program are:

23 (1) to provide a predictable source of assistance to
24 urbanized areas, through a formula grant program, to

1 finance the efficient and effective use of our existing
2 transportation services and facilities;

3 (2) to provide increased public transportation avail-
4 ability for all citizens including the transportation dis-
5 advantaged, through the operation of public transporta-
6 tion systems which include services for all citizens, and
7 to provide services, employment, and business opportu-
8 nities on a nondiscriminatory basis through the creation
9 and development of public transportation;

10 (3) to allocate available Federal and local resources
11 through a more efficient use of the existing transportation
12 resources and an analysis of alternative transportation
13 investments to meet the need for transportation facilities;

14 (4) to encourage the planning, development, and
15 operation of areawide public transportation systems
16 which meet Federal and local environmental, urban
17 development, and energy conservation objectives; and

18 (5) to assist in the development and deployment
19 of improved and innovative public transportation facili-
20 ties, equipment, techniques, and methods with the
21 cooperation of public transportation companies both
22 public and private.

23 DISCRETIONARY GRANT OR LOAN PROGRAM

24 SEC. 503. (a) Section 3 (a) of the Urban Mass Trans-
25 portation Act of 1964 is amended to read as follows:

1 “(a) (1) The Secretary is authorized, in accordance
2 with the provisions of this Act and on such terms and con-
3 ditions as the Secretary may prescribe, to make grants or
4 loans (directly, through the purchase of securities or equip-
5 ment trust certificates, or otherwise) to assist States and
6 local public bodies and agencies thereof in financing:

7 “(A) the following major mass transportation
8 investments:

9 “(i) the construction of new fixed guideway
10 systems and extensions to existing fixed guideway
11 systems, including the acquisition of real property,
12 the initial acquisition of rolling stock needed for such
13 systems and the detailed alternative analyses relat-
14 ing to the development of such systems;

15 “(ii) major bus fleet expansions including the
16 acquisition of real property and the construction of
17 facilities and equipment for such fleet expansions;

18 “(B) the acquisition, construction, and improve-
19 ment of facilities and equipment eligible for assistance
20 under section 5 (d) (1) of this Act where the Secretary
21 finds that emergency circumstances exist and that Fed-
22 eral assistance available to the applicant under section 5
23 of this Act could not have been used reasonably to fund
24 such emergency projects;

25 “(C) the introduction into public transportation

1 service of new technology (in the form of innovative
2 and improved products) ; and

3 “(D) the costs incurred in connection with projects
4 for the acquisition of land and preparation of such land
5 for urban development purposes to enhance the effective-
6 ness of any mass transportation project approved under
7 this Act, and which are physically and functionally re-
8 lated to such mass transportation project. Such assistance
9 can include but is not limited to the cost of demolition,
10 site preparation, utilities, building foundations, walk-
11 ways, and open space but cannot include the cost of
12 construction of commercial revenue producing facilities,
13 whether publicly or privately owned, or those portions
14 of public facilities not related to public transportation.
15 Such grants or loans shall be subject to the terms, condi-
16 tions, requirements, and provisions (similar insofar as
17 may be appropriate to those applicable to grants and
18 loans under this section and section 5 of this Act), as
19 the Secretary may determine to be necessary or appro-
20 priate for purposes of this section, including requirements
21 for the disposition of the net increase in value of such land
22 resulting from the project assisted under this section.
23 Nothing in this subparagraph shall authorize the Secre-
24 tary to waive the provision of section 13 (c) of the Act.
25 In administering this subparagraph, the Secretary shall

1 confer with the Secretary of Housing and Urban Devel-
2 opment and the Secretary of Commerce concerning com-
3 munity development activities and plans for urban area
4 developments which may be benefited by the program
5 assisted under this subparagraph.

6 “(2) (A) No grant or loan shall be provided under
7 this section unless the Secretary determines that the appli-
8 cant has or will have—

9 “(i) the legal, financial, and technical capacity to
10 carry out the proposed project; and

11 “(ii) satisfactory continuing control, through oper-
12 ation or lease or otherwise, over the use of the facilities
13 and the equipment.

14 “(B) The Secretary may make loans for real property
15 acquisition pursuant to subsection (b) upon a determina-
16 tion, which shall be in lieu of the preceding determination,
17 that the real property is reasonably expected to be required
18 in connection with a mass transportation system and that it
19 will be used for that purpose within a reasonable period.

20 “(C) No grant or loan funds shall be used for pay-
21 ment of ordinary governmental or nonproject operating ex-
22 penses, nor shall any grant or loan funds be used to support
23 procurements utilizing exclusionary or discriminatory speci-
24 fications.

25 “(3) The Governor, responsible local officials, and pub-

1 licly owned operators of mass transportation services, in
2 accordance with the procedures required under section 8 of
3 this Act and with the concurrence of the Secretary, shall
4 designate a single recipient for each project to receive and
5 dispense the funds granted under this section for the con-
6 struction of a new fixed guideway system or the extension
7 of an existing fixed guideway system.

8 “(4) The Secretary shall not approve a grant or loan
9 for a project under this section unless the Secretary finds
10 that such project is part of an approved program of projects
11 required by section 8 of this Act.

12 “(5) The Secretary is authorized to announce an
13 intention to obligate for a project under this section through
14 the issuance of a letter of intent to the applicant. Such an
15 action shall not be deemed an obligation as defined under
16 section 1311 of the Act of August 26, 1954, as amended
17 (31 U.S.C. 200), nor shall such a letter be deemed an
18 administrative commitment. The letter shall be regarded
19 as an intention to obligate from budget authority provided
20 in an appropriation Act not to exceed an amount stipulated
21 as the Secretary's financial participation in the defined
22 project under this section. No obligation or administrative
23 commitment may be made pursuant to such a letter of intent
24 except as funds are provided in appropriation Acts. The
25 total estimated amount of future Federal obligations stipu-

1 lated for each fiscal year covered by all outstanding letters
2 of intent shall not exceed the amount authorized for such
3 fiscal year in section 4 (c) of this Act less an amount
4 estimated by the Secretary to be necessary for section 3
5 grants which are not covered by a letter of intent.”.

6 (b) Section 3 (e) of the Urban Mass Transportation
7 Act of 1964 is amended by deleting the phrase “(1) the
8 Secretary finds that such assistance is essential to a program,
9 proposed or under active preparation, for a unified or
10 officially coordinated urban transportation system as part
11 of the comprehensively planned development of the urban
12 area” and inserting in lieu thereof the following phrase:
13 “(1) the Secretary finds that such assistance is essential
14 to the program of projects required by section 8 of this
15 Act”.

16 (c) Section 3 (g) of the Urban Mass Transportation
17 Act of 1964 is amended by striking out the last sentence, and
18 inserting in lieu thereof the following: “Upon receiving a
19 complaint regarding an alleged violation, the Secretary shall
20 investigate and shall determine whether a violation has oc-
21 curred. Upon a determination that a violation has occurred,
22 the Secretary shall take appropriate action to correct the
23 violation under the terms and conditions of the agreement.”.

24 (d) Section 3 (h) of the Urban Mass Transportation Act
25 of 1964 is deleted.

1 AUTHORIZATIONS

2 SEC. 504. (a) The title of section 4 of the Urban
3 Mass Transportation Act of 1964 is amended by striking
4 out "LONG-RANGE PROGRAM" and inserting in lieu thereof
5 "NET PROJECT COST, FEDERAL SHARE, AND AUTHORIZA-
6 TIONS".

7 (b) Section 4(a) of the Urban Mass Transportation
8 Act of 1964 is amended by deleting the first three sen-
9 tences.

10 (c) Section 4(c) of the Urban Mass Transportation
11 Act of 1964 is amended by inserting "(1)" immediately
12 after "(c)", by deleting the last sentence, and by adding
13 at the end thereof the following new paragraphs:

14 "(2) Notwithstanding paragraph (1) of this sub-
15 section or any other provision of this Act, the unobligated
16 balance of contract authority established pursuant to para-
17 graph (1) shall not be available for administrative com-
18 mitment after September 30, 1978, and shall lapse on
19 September 30, 1980.

20 "(3) To finance additional grants and loans under
21 section 3 of this Act, there are authorized to be appropriated
22 not to exceed \$640,000,000 for the fiscal year ending
23 September 30, 1979; \$690,000,000 for the fiscal year
24 ending September 30, 1980; \$740,000,000 for the fiscal
25 year ending September 30, 1981; \$790,000,000 for the

1 fiscal year ending September 30, 1982; and \$840,000,000
2 for the fiscal year ending September 30 1983.”.

3 (d) Section 4 of the Urban Mass Transportation Act
4 of 1964 is amended by adding the following new sub-
5 sections:

6 “(e) To finance grants under section 5 of this Act there
7 are authorized to be appropriated not to exceed \$1,735,-
8 000,000 for the fiscal year ending September 30, 1979;
9 \$1,785,000,000 for the fiscal year ending September 30,
10 1980; \$1,835,000,000 for the fiscal year ending September
11 30, 1981; and \$1,885,000,000 for the fiscal year ending
12 September 30, 1982.

13 “(f) Two per centum of the funds appropriated for each
14 fiscal year under subsections (c) (3) and (e) of this section
15 shall be set aside to be used for the purposes of section 602
16 of the Highway and Public Transportation Improvement
17 Act of 1978.

18 “(g) After the deduction required by subsection (f)
19 of this section has been made, there shall be set aside not
20 to exceed $1\frac{1}{2}$ per centum of the remaining funds appropriated
21 for each fiscal year under subsection (e) of this section to
22 be used for the purposes of section 5 (a) (3) of this Act.

23 “(h) The amount to be appropriated for public mass
24 transit projects substituted for routes on the Interstate
25 System under section 103 (e) (4) of title 23, United States

1 Code, shall not exceed \$675,000,000 for the fiscal year
2 ending September 30, 1979; \$675,000,000 for the fiscal
3 year ending September 30, 1980; \$725,000,000 for the
4 fiscal year ending September 30, 1981; \$725,000,000 for
5 the fiscal year ending September 30, 1982; and \$725,-
6 000,000 for the fiscal year ending September 30, 1983.

7 “(i) Appropriations pursuant to the authority of sub-
8 sections (c) (3) and (h) may be made in an appropria-
9 tion Act for a fiscal year preceding the fiscal year in which
10 the appropriation is to be available for obligation, and shall
11 remain available for three years following the close of the
12 fiscal year for which such appropriations are made.

13 “(j) There is authorized to be appropriated to carry
14 out the functions under this Act except for grants of con-
15 tracts made under sections 3, 5, and 8, not to exceed
16 \$90,000,000 for the fiscal year ending September 30, 1979;
17 not to exceed \$95,000,000 for the fiscal year ending Sep-
18 tember 30, 1980; not to exceed \$100,000,000 for the fiscal
19 year ending September 30 1981; and not to exceed \$105,-
20 000,000 for the fiscal year ending September 30, 1982.”.

21 FORMULA GRANT PROGRAM FOR URBANIZED AREAS

22 SEC. 505 (a) Subsections (a) and (b) of section 5
23 of the Urban Mass Transportation Act of 1964 are amended
24 to read as follows:

1 “(a) (1) The Secretary shall apportion for expenditure
2 in fiscal years 1975 through 1978 the sums authorized by
3 subsection (c). Such sums shall be made available for ex-
4 penditure in urbanized areas or parts thereof on the basis
5 of a formula under which urbanized areas or parts thereof
6 will be entitled to receive an amount equal to the sum of—

7 “(A) one-half of the total amount so apportioned
8 multiplied by the ratio which the population of such
9 urbanized area or part thereof, as designated by the
10 Bureau of the Census, bears to the total population of
11 all the urbanized areas in all the States as shown by
12 the latest available Federal census; and

13 “(B) one-half of the total amount so apportioned
14 multiplied by a ratio for that urbanized area determined
15 on the basis of population weighted by a factor of
16 density, as determined by the Secretary.

17 As used in this section, the term ‘density’ means the
18 number of inhabitants per square mile.

19 “(2) The Secretary, after making the deductions re-
20 quired by subsections (f) and (g) of section 4 of this Act,
21 shall apportion for expenditure in fiscal year 1979 and sub-
22 sequent fiscal years the remainder of the sums authorized by
23 subsection (e) of section 4 of this Act. Such sums shall be
24 made available to a designated recipient, or Governor, in

1 accordance with subsection (b) of this section on the basis
2 of a calculation made for each urbanized area using the
3 following formula:

4 “(A) Twenty-five and one-half per centum of the
5 total amount to be apportioned multiplied by the
6 ratio which the population of the urbanized area or part
7 thereof, as designated by the Bureau of the Census,
8 bears to the total population of all urbanized areas in
9 all the States as shown by the latest available census.

10 “(B) Twenty-five and one-half per centum of the
11 total amount to be apportioned multiplied by a ratio for
12 that urbanized area determined on the basis of popula-
13 tion weighted by a factor of density as determined by
14 the Secretary.

15 “(C) Five per centum of the total amount to be
16 apportioned multiplied by a ratio which the number of
17 commuter rail train miles operated within or serving
18 the urbanized area in the prior fiscal year, bears to the
19 total number of commuter rail train miles operated in
20 or serving all urbanized areas in the prior fiscal year.

21 “(D) Nineteen per centum of the total amount to
22 be apportioned multiplied by the ratio that the number
23 of fixed guideway system route miles (excluding com-
24 muter rail route miles), weighted by a factor for age of

1 such route miles as determined by the Secretary, in the
2 urbanized area in the prior fiscal year bears to the total
3 number of fixed guideway system route miles (exclud-
4 ing commuter rail route miles) in all urbanized areas
5 in the prior fiscal year.

6 “(E) Twenty-five per centum of the total amount
7 to be apportioned, on the basis of the following factors:

8 “(i) a factor for the replacement of buses, as
9 determined by the Secretary; and

10 “(ii) the ratio that the number of bus seat-
11 miles operated in or serving the urbanized area in
12 the prior fiscal year bears to the total number of
13 bus seat-miles operated in or serving all urbanized
14 areas in the prior fiscal year.

15 The Secretary shall on an annual basis determine the
16 weights which shall be applied to each factor under
17 this subparagraph. In fiscal years 1979 and 1980, the
18 Secretary is authorized to set aside up to 20 per centum
19 of each fiscal year's funds to be apportioned under this
20 subparagraph and to use such set-aside funds to make
21 grants for replacement of buses not covered by the for-
22 mula and to provide financial assistance to complete
23 projects which have been the subject of grants made
24 under section 3 of this Act prior to January 1, 1978,

1 but which are not eligible for assistance under such
2 section as amended by the Federal Public Transporta-
3 tion Act of 1978.

4 Sums made available under this section shall be available
5 for expenditure in urbanized areas or parts thereof.

6 “(3) Funds set aside each fiscal year under subsection
7 (g) of section 4 of this Act shall be available until obligated
8 for grants by the Secretary to States and local public bodies
9 for the deployment of innovative techniques and methods in
10 the management and operation of public transportation serv-
11 ices. In each fiscal year grants for any one State shall not
12 exceed $12\frac{1}{2}$ per centum of the funds set aside in that fiscal
13 year for the purposes of this subsection.

14 “(b) (1) The Governor, responsible local officials, and
15 publicly owned operators of mass transportation services, in
16 accordance with the procedures required under section 8 of
17 this Act, with the concurrence of the Secretary, shall desig-
18 nate a recipient or recipients to receive and dispense the
19 funds apportioned under subsection (a) that are attributable
20 to urbanized areas of two hundred thousand or more popula-
21 tion. The term ‘designated recipient’ as used in this section
22 shall refer to the recipient selected according to the pro-
23 cedures required by this paragraph.

24 “(2) Sums apportioned under subsection (a) not made
25 available for expenditure by designated recipients in accord-

1 ance with the terms of paragraph (1) of this subsection
2 shall be made available to the Governor for expenditure in
3 urbanized areas or parts thereof in accordance with the pro-
4 cedures required under section 8 and shall be fairly and
5 equitably distributed. The Governor shall submit annually
6 a report to the Secretary concerning the allocation of funds
7 made available under this paragraph.”.

8 (b) Section 5(c) of the Urban Mass Transportation
9 Act of 1964 is amended by deleting paragraph (2) of such
10 subsection and by inserting in lieu thereof the following new
11 paragraphs:

12 “(2) Notwithstanding paragraph (1) of this subsection
13 or any other provision of this Act, no part of the authoriza-
14 tions contained in paragraph (1) of this subsection shall be
15 apportioned after September 30, 1978, and any unappor-
16 tioned authorizations shall lapse on September 30, 1980.

17 “(3) Sums apportioned under this section shall be
18 available for obligation by the Governor or designated
19 recipient for a period of three years following the close of
20 the fiscal year for which sums are apportioned and any
21 amounts so apportioned remaining unobligated at the end
22 of such period shall be added to the amount available for
23 apportionment under this section for the succeeding fiscal
24 year.”.

1 (c) Section 5(d) of the Urban Mass Transportation
2 Act of 1964 is amended to read as follows:

3 “(d) The Secretary may approve as a project under
4 this section, on such terms and conditions as he or she may
5 prescribe, (1) the acquisition, construction, and improve-
6 ment of facilities and equipment for use, by operation or
7 lease or otherwise, in public transportation service, includ-
8 ing projects eligible under section 3(a)(1)(D) of this
9 Act, and (2) the payment of operating expenses to im-
10 prove or to continue such service by operation, lease, con-
11 tract, or otherwise.”.

12 (d) Section 5(e) of the Urban Mass Transportation
13 Act of 1964 is amended by adding the words “net project”
14 before the word “cost” in the first sentence, by deleting the
15 second sentence thereof, and by deleting the word “mass”
16 in the third sentence thereof.

17 (e) Section 5(f) of the Urban Mass Transportation
18 Act of 1964 is amended to read as follows:

19 “(f) (1) The total amount of a Federal grant for any
20 operating assistance project shall not exceed $33\frac{1}{3}$ per
21 centum of the total eligible operating expenses incurred
22 in the operation of the services which are assisted under this
23 section for the period covered by such grant.

24 “(2) In no case shall that portion of each fiscal year’s

1 apportionment under this section attributable to an urban-
2 ized area which is used for the payment of operating ex-
3 penses exceed the total amount attributable to such
4 urbanized area under subparagraphs (A), (B) and 60
5 per centum of the amount attributable to such area under
6 subparagraph (C) of subsection (a) (2) of this section.

7 “(3) (A) An amount not to exceed 50 per centum of
8 each fiscal year's apportionment under this section to an
9 urbanized area of 200,000 or more population may be
10 eligible, upon request of the designated recipient and with
11 the approval of the Secretary, for use for urban highway
12 projects as defined in 23 U.S.C. 101. The Governor shall
13 be given the opportunity to review and comment on such a
14 proposed use.

15 “(B) An amount not to exceed 50 per centum of each
16 fiscal year's apportionment under this section to a Governor
17 pursuant to subsection (b) (2) of this section may be
18 eligible, upon request of the Governor and with the ap-
19 proval of the Secretary, for use for urban highway projects
20 as defined in 23 U.S.C. 101.”

21 (f) Section 5(g) of the Urban Mass Transportation
22 Act of 1964 is amended to read as follows:

23 “(g) The Secretary shall not approve a grant or loan
24 for a project under this section unless he or she finds that

1 such project is part of the approved program of projects
2 required by section 8 of this Act; and that the applicant
3 or responsible agency has or will have—

4 “(1) the legal, financial, and technical capacity
5 to carry out the proposed project; and

6 “(2) satisfactory continuing control, through opera-
7 tion or lease or otherwise, over the use of project facil-
8 ities and equipment.”.

9 (g) Section 5 (l) of the Urban Mass Transportation
10 Act of 1964 is deleted.

11 (h) Section 5 (m) of the Urban Mass Transportation
12 Act of 1964 is redesignated to be subsection (l) .

13 (i) Section 5 (n) of the Urban Mass Transportation
14 Act of 1964 is redesignated as section 5 (m) and paragraph
15 (1) thereof is amended to read as follows:

16 “(1) The provisions of section 13 (c) of this Act
17 shall apply in carrying out public transportation projects
18 under this section, and the provisions of section 3 (e) (4)
19 of this Act shall apply in carrying out mass transporta-
20 tion projects under this section.”

21 TECHNICAL STUDIES

22 SEC. 506. Section 9 of the Urban Mass Transporta-
23 tion Act of 1964 is repealed.

FELLOWSHIP ASSISTANCE

SEC. 507. Section 10 of the Urban Mass Transportation Act of 1964 is amended to read as follows:

"GRANTS FOR TRAINING PROGRAMS

"SEC. 10. The Secretary is authorized to make grants to States, local public bodies, and agencies thereof (and operators of public transportation services) to provide fellowships for training of personnel employed in managerial, technical, and professional positions in the public transportation field. Fellowships shall be for not more than one year of training in public or private training institutions offering programs having application in the public transportation industry. The recipient of a fellowship under this section shall be selected by the grantee on the basis of demonstrated ability and for the contribution which he or she can be reasonably expected to make to an efficient public transportation operation. The assistance under this section toward each fellowship shall not exceed 75 per centum of the sum of (1) tuition and other charges to the fellowship recipient, (2) any additional costs incurred by the training institution in connection with the fellowship and billed to the grant recipient, and (3) the regular salary of the fellowship recipient for the

1 period of the fellowship (to the extent that salary is actually
2 paid or reimbursed by the grant recipient).”.

3 DEFINITIONS AND GENERAL PROVISIONS

4 SEC. 508. (a) Section 12 (c) of the Urban Mass Trans-
5 portation Act of 1964 is amended to read as follows:

6 “(c) As used in this Act—

7 “(1) the term ‘construction’ means the supervis-
8 ing, inspecting, actual building, and all expenses in-
9 cidental to the acquisition, construction, or reconstruc-
10 tion of facilities and equipment for use in public trans-
11 portation, including designing, engineering, locating,
12 surveying, mapping, acquisition of rights-of-way, reloca-
13 tion assistance, and acquisition and replacement of
14 housing sites;

15 “(2) the term ‘fixed guideway’ means any public
16 transportation facility which utilizes and occupies a sep-
17 arate right-of-way for the exclusive use of public trans-
18 portation service including, but not limited to, fixed
19 rail, automated guideway transit, and exclusive facil-
20 ities for buses and other high occupancy vehicles;

21 “(3) the term ‘Governor’ means the Governor,
22 or his or her designate, of any one of the fifty States
23 or of Puerto Rico, and the Mayor of the District of
24 Columbia, or his or her designate;

25 “(4) the term ‘handicapped person’ means, any in-

1 dividual who by reason of illness, injury, age, con-
2 genital malfunction, or other permanent or temporary
3 incapacity or disability, including any person who is
4 wheelchair bound or has semiambulatory capabilities, is
5 unable without special facilities or special planning or
6 design to utilize public transportation facilities and serv-
7 ices effectively. The Secretary may, by regulation, adopt
8 modifications of this definition for purposes of section
9 5 (1) of this Act;

10 “(5) the term ‘local public bodies’ includes munici-
11 palities and other political subdivisions of States; public
12 agencies and instrumentalities of one or more States,
13 municipalities and political subdivisions of States; In-
14 dian tribes; and public corporations, boards, and com-
15 missions established under the laws of any State;

16 “(6) the term ‘mass transportation’ means trans-
17 portation by bus, or rail or other conveyance, either
18 publicly or privately owned, which provides to the pub-
19 lic general or special service (but not including school
20 buses or charter or sightseeing service) on a regular and
21 continuing basis;

22 “(7) the term ‘public paratransit’ means those
23 forms of collective passenger transportation, as defined
24 by the Secretary, which provide shared-ride service to
25 the general public or special categories of users on a

1 regular and predictable basis and which do not neces-
2 sarily operate on fixed schedules or over prescribed
3 routes;

4 “(8) the term ‘public transportation’ means either
5 mass transportation or public paratransit or both;

6 “(9) the term ‘Secretary’ means the Secretary of
7 Transportation;

8 “(10) the term ‘States’ means the several States,
9 the District of Columbia, the Commonwealth of Puerto
10 Rico, and the possessions of the United States; and

11 “(11) the term ‘urbanized area’ means an area of
12 fifty thousand or more population so designated by the
13 Bureau of the Census, within boundaries to be fixed by
14 responsible State and local officials in cooperation with
15 each other, subject to approval by the Secretary. Such
16 boundaries shall, as a minimum, encompass the entire
17 urbanized area within a State as designated by the
18 Bureau of the Census.”.

19 (b) Subsections (d) and (f) of section 12 of the
20 Urban Mass Transportation Act of 1964 are deleted and
21 section 12 (e) is redesignated as section 12 (d).

22 (c) Section 12 of the Urban Mass Transportation Act
23 of 1964 is amended to add the following new subsections:

24 “(e) None of the provisions of this Act shall be con-
25 strued to authorize Federal financial assistance for the pur-

1 pose of financing the acquisition by one public body of land,
2 facilities, or equipment used in mass transportation from
3 another public body in the same geographic area.

4 “(f) The Secretary shall have the authority to review
5 and approve the design of projects assisted under this Act.

6 “(g) The Secretary shall have authority to issue such
7 regulations as he or she deems necessary to administer this
8 Act.”.

9 AMENDMENT TO SECTION 16 ELDERLY AND HANDICAPPED
10 PROGRAM

11 SEC. 509. (a) The last sentence of section 16(b) of
12 the Urban Mass Transportation Act of 1964 is amended
13 to read as follows: “Recipients of sums apportioned under
14 section 5 of this Act may allocate portions of such sums as
15 the recipients and the Secretary determine to be appropriate
16 for grants or loans under subsection (b) (2) of this section.”.

17 (b) Section 16(d) of the Urban Mass Transportation
18 Act of 1964 is deleted.

19 COMMUTER RAIL OPERATING ASSISTANCE

20 SEC. 510. (a) Section 17(d) of the Urban Mass
21 Transportation Act of 1964 is amended by inserting the
22 word “and” immediately after the semicolon in paragraph
23 (3); by deleting the semicolon and the word “and” at the
24 end of paragraph (4) and inserting in lieu thereof a pe-
25 riod; and by deleting paragraph (5).

1 (b) Section 17(f) of the Urban Mass Transportation
2 Act of 1964 is amended by striking out "\$185,000,000"
3 in the first sentence and inserting in lieu thereof "\$125,-
4 000,000" and by amending the second sentence to read as
5 follows: "There are authorized to be appropriated for liqui-
6 dation of the obligations incurred under this section not
7 to exceed \$20,000,000 by September 30, 1976, \$95,000,-
8 000 by September 30, 1977 and \$125,000,000 by Sep-
9 tember 30, 1978, such sums to remain available until
10 expended."

11 (c) Section 18 of the Urban Mass Transportation Act
12 of 1964 is repealed.

13 NONDISCRIMINATION

14 SEC. 511. The Urban Mass Transportation Act of 1964
15 is amended to add the following new section:

16 "NONDISCRIMINATION

17 "SEC. 19. (a) (1) GENERAL.—No person in the
18 United States shall on the ground of race, color, creed, na-
19 tional origin, sex, or age be excluded from participation in,
20 or denied the benefits of, or be subject to discrimination
21 under any project, program, or activity funded in whole or
22 in part through financial assistance under this Act. The pro-
23 visions of this section shall apply to employment and busi-
24 ness opportunities and shall be considered to be in addition

1 to and not in lieu of the provisions of title VI of the Civil
2 Rights Act of 1964.

3 “(2) AFFIRMATIVE ACTION.—The Secretary shall take
4 affirmative action to assure compliance with subsection (a)
5 (1) of this section.

6 “(3) COMPLIANCE.—(A) Whenever the Secretary
7 determines that any person receiving financial assistance,
8 directly or indirectly, under this Act, has failed to comply
9 with subsection (a) (1) of this section, with any Federal
10 civil rights statute, or with any order or regulation issued
11 under such statute, the Secretary shall notify such person
12 of such determination and shall direct such person to take
13 such action as may be necessary to assure compliance with
14 such subsection.

15 “(B) If, within a reasonable period of time after receiv-
16 ing notification pursuant to paragraph (a) of this subsection,
17 such person fails or refuses to comply with subsection (a)
18 (1) of this section, the Secretary shall:

19 “(i) direct that no further Federal financial as-
20 sistance under this Act be provided to such person;

21 “(ii) refer the matter to the Attorney General
22 with a recommendation that an appropriate civil action
23 be instituted;

24 “(iii) exercise the powers and functions provided

1 by title VI of the Civil Rights Act of 1964 (42 U.S.C.
2 2000d et seq.) ; and/or

3 “(iv) take such other actions as may be provided
4 by law.

5 “(4) CIVIL ACTION.—Whenever a matter is referred
6 to the Attorney General pursuant to subsection (a) (3)
7 (B) (ii) of this section, or whenever the Attorney General
8 has reason to believe that any person is engaged in a pat-
9 tern or practice in violation of the provisions of this section,
10 the Attorney General may commence a civil action in any
11 appropriate district court of the United States for such relief
12 as may be appropriate, including injunctive relief.

13 “(5) REGULATIONS.—The Secretary may prescribe
14 such regulations and take such actions as are necessary to
15 monitor, enforce, and affirmatively carry out the purposes
16 of this section.

17 “(6) DEFINITION.—For purposes of this section, the
18 term ‘person’ includes one or more governmental agencies,
19 political subdivisions, authorities, partnerships, associations,
20 corporations, legal representatives, mutual companies, joint-
21 stock companies, trusts, unincorporated organizations,
22 trustees, trustees in bankruptcy, or receivers.

23 “(b) Notwithstanding any other provision of this Act,
24 and subject to regulations issued by the Secretary, eligible
25 expenses for projects under sections 3 and 5, may include

1 employment training programs, and training and assistance
2 for minority business opportunities. Such assistance may in-
3 clude assistance in seeking venture capital, obtaining surety
4 bonding, obtaining management and technical services, and
5 contracting with public agencies organized for such
6 purposes.”.

7 TECHNICAL AMENDMENTS

8 SEC. 512. (a) Section 3 (d) of the Urban Mass Trans-
9 portation Act of 1964 is amended by deleting the word
10 “mass” and inserting in lieu thereof the word “public”.

11 (b) Section 6 of the Urban Mass Transportation Act
12 of 1964 is amended by deleting the words “urban mass”,
13 “urban”, and “mass” where they appear, and in each case
14 substituting in lieu thereof the word “public”.

15 (c) Section 15 of the Urban Mass Transportation Act
16 of 1964 is amended by deleting the word “mass” where it
17 appears in the first and second sentence.

18 (d) Section 16 of the Urban Mass Transportation Act
19 of 1964 is amended by deleting the word “mass” wherever
20 it appears and substituting in lieu thereof the word “public”.

21 LOAN FORGIVENESS

22 SEC. 513. (a) The Secretary of Transportation may
23 convert equipment and facilities loans heretofore made under
24 section 3 (a) of the Urban Mass Transportation Act of 1964
25 or title II of the Housing Amendments of 1955 (42 U.S.C.

1 1492), to grants under the conditions set forth below. A
2 grant agreement for the acquisition, construction, reconstruc-
3 tion, or improvement of facilities and equipment under sec-
4 tion 3 (a) or 5 of the Urban Mass Transportation Act of
5 1964 may provide for forgiveness of principal and interest on
6 a loan previously made in lieu of a cash grant in the
7 amount forgiven. Such grant shall be subject to such terms
8 and conditions as the Secretary may deem necessary and
9 appropriate, taking into account the degree of completion of
10 the project financed with the loan.

11 (b) In lieu of the local matching share otherwise re-
12 quired, the grant agreement may provide that State or local
13 funds shall be committed to public transportation projects
14 in the urbanized area, on a schedule acceptable to the Secre-
15 tary, in an amount equal to the local share that would have
16 been required had the amount of principal and interest for-
17 given been the Federal share of a capital grant made when
18 the original loan was made. The State or local funds con-
19 tributed under the terms of the preceding sentence shall be
20 made available for capital projects eligible for funding under
21 section 3 (a) or 5 of the Urban Mass Transportation Act
22 of 1964 and may not be used to satisfy the local matching
23 requirements for any other grant project.

REORGANIZATION

1
2 SEC. 601. In order to provide for a more efficient and
3 orderly administration of the laws dealing with highways
4 and mass transportation, no later than September 30, 1979,
5 the Secretary of Transportation shall prepare a plan, in the
6 manner and to the extent he or she deems appropriate, to
7 consolidate the Urban Mass Transportation Administration
8 and the Federal Highway Administration and other ele-
9 ments of the Department into one surface transportation
10 agency within the Department of Transportation. After
11 preparation, the plan shall be transmitted to the President.

CONSOLIDATED PLANNING FUND

12
13 SEC. 602. (a) In accordance with this section, the Sec-
14 retary of Transportation is authorized to make grants to
15 States and, in urbanized areas over one million in popula-
16 tion, to metropolitan planning organizations designated by
17 the Governor for projects for the development of transporta-
18 tion plans and programs required by section 8 of the Urban
19 Mass Transportation Act of 1964, as amended, and by sec-
20 tion 134 of title 23, United States Code; and to make grants
21 and contracts for activities eligible under section 8 (f) of
22 the Urban Mass Transportation Act of 1964, as amended.
23 Grants under this section shall be from funds made available

1 under section 4 (f) of the Urban Mass Transportation Act
2 of 1964, and section 104 (f) and section 133 (g) of title 23,
3 United States Code.

4 (b) The Federal share of such projects under this sec-
5 tion shall not exceed 80 per centum thereof unless the Sec-
6 retary determines that the interests of the Federal program
7 would be best served without matching funds. The Secretary
8 shall establish by regulation a formula by which some or all
9 of the funds available to carry out the purposes of this sec-
10 tion shall be distributed to appropriate recipients. Funds not
11 distributed by formula will be retained by the Secretary for
12 use on a discretionary basis.

13 (c) The amount of funds made available to a State
14 pursuant to the formula established under subsection (b)
15 that are attributable to an urbanized area with a population
16 of two hundred thousand but less than one million shall be
17 made available by the State to the metropolitan planning
18 organization designated by the Governor in that urbanized
19 area. The funds made available to a State pursuant to the
20 formula established by subsection (b) that are attributable
21 to urbanized areas with a population of less than two hundred
22 thousand shall be allocated by the State to the metropolitan
23 planning organizations of such areas in a fair and equitable
24 manner.

PLANNING

1

2 SEC. 603. (a) Section 134 of title 23, United States
3 Code, is amended by—

4 (1) changing the section heading to read “Plan-
5 ning”.

6 (2) redesignating subsection (b) as subsection
7 (e) ; and

8 (3) deleting subsection (a) .

9 (b) Section 8 of the Urban Mass Transportation Act
10 is repealed.

11 (c) Section 134 of title 23, United States Code, is
12 amended, and a new section 8 of the Urban Mass Trans-
13 portation Act is added, both to read as follows :

14 “(a) It is declared to be in the national interest to en-
15 courage and promote the development of transportation sys-
16 tems embracing various modes of transportation in a manner
17 that will serve the States and local communities efficiently
18 and effectively. To accomplish this objective, the Secretary
19 shall cooperate with State and local officials in the develop-
20 ment of statewide and urbanized area transportation plans
21 and programs which are formulated on the basis of trans-
22 portation needs with due consideration to comprehensive
23 long-range land use plans, development objectives, and over-
24 all social, economic, environmental, system performance,

1 and energy conservation goals and objectives. The planning
2 process shall include an analysis of alternative transportation
3 system management and investment strategies to make more
4 efficient use of existing transportation resources and to meet
5 needs for new transportation facilities. The process shall
6 consider all modes of transportation and shall be continuing,
7 cooperative, and comprehensive to the degree appropriate
8 based on the complexity of the transportation problems.

9 “(b) (1) The urbanized areas planning process shall
10 be carried on by local officials acting through a metropolitan
11 planning organization designated by the Governor, and in
12 cooperation with the State. It should be fully integrated
13 with the statewide process.

14 “(2) The statewide planning process shall be carried
15 out by the State in cooperation with local officials and
16 provide for integration with local planning activities.

17 “(c) (1) With respect to title 23, United States Code,
18 a program of projects shall not be approved under section
19 105 unless (1) the Secretary finds that the urbanized area
20 or, after October 1, 1980, the statewide planning process
21 on which the program is based is being carried on in con-
22 formance with the objectives of this section, and (2) the
23 Secretary finds that the program of projects is based on
24 the planning process.

25 “(2) With respect to the Urban Mass Transportation

1 Act of 1964, a program of projects eligible for assistance
2 under this Act shall be submitted for approval to the Secre-
3 tary. The Secretary shall not approve any program of proj-
4 ects in whole or in part unless (1) the Secretary finds that
5 the urban area or, after October 1, 1980, the statewide
6 planning process on which the program is based is being
7 carried on in conformance with the objectives of this section,
8 and (2) the Secretary finds that the program of projects
9 is based on the planning process.

10 “(d) The metropolitan planning organization for ur-
11 banized areas over one million population, after giving
12 the Governor an opportunity to review and comment, shall
13 submit to the Secretary for approval in whole or in part—
14 “(1) the area’s transportation plan or modification
15 thereof; and

16 “(2) a transportation improvement program.

17 Before approving a plan or program the Secretary shall find
18 that it reasonably addresses the following factors: the trans-
19 portation needs of the area, air quality, energy conservation,
20 environmental quality, accessibility to employment, effect on
21 minorities, housing, land use, and future development. The
22 Secretary shall advise the metropolitan planning organiza-
23 tion of the reasons for not approving a plan or program.
24 Approval by the Secretary of any plan or program under
25 this subsection shall not prevent the Secretary from subse-

1 quently disapproving any individual transportation project
2 pursuant to the provisions of title 23, United States Code,
3 or the Urban Mass Transportation Act of 1964, or other
4 Federal law, including but not limited to the National En-
5 vironmental Policy Act and section 4 (f) of the Department
6 of Transportation Act.”.

7 (d) Section 8 of the Urban Mass Transportation Act
8 of 1964, as added by the preceding paragraph, is amended
9 by adding the following additional subsections:

10 “(e) The plans and programs required by this section
11 shall encourage to the maximum extent feasible the partici-
12 pation of private enterprise. Where facilities and equipment
13 are to be acquired which are already being used in mass
14 transportation service in the urban area, the program must
15 provide that they shall be so improved (through modern-
16 ization, extension, addition, or otherwise) that they will
17 better serve the transportation needs of the area.

18 “(f) The Secretary is authorized to conduct special
19 studies such as (1) studies to improve the implementation
20 of the urban transportation planning process; (2) studies
21 related to management, operations, capital requirements, and
22 economic feasibility of public transportation systems; (3)
23 evaluation of previously funded projects; and (4) other re-
24 lated studies.”.

1 (e) The analysis of chapter 1 of title 23 is amended
2 by deleting

“134. Transportation planning in certain urban areas.”

3 and inserting in lieu thereof

“134. Planning.”.

4 (f) The title of section 8 of the Urban Mass Trans-
5 portation Act shall read: “PLANNING”.

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HIGHWAY/TRANSIT PROPOSALS

WEDNESDAY, FEBRUARY 1, 1978

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON SURFACE TRANSPORTATION,
OF THE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:02 a.m., in room 2167, Rayburn House Office Building, Hon. James J. Howard (chairman of the subcommittee) presiding.

Mr. HOWARD. The Subcommittee on Surface Transportation of the Committee on Public Works and Transportation will come to order.

Today is the final day of hearings on surface transportation of this subcommittee on combined highways, highway safety, and public transit legislation for 1978.

It concludes a yearlong span of hearings in 1977, during which all segments of the transportation community, from all parts of the country, have had their time to appear before the committee and express their views.

There have been in addition a considerable number of statements filed separately for the record.

Last July during these hearings, I introduced H.R. 8648, which contains the primary issues that the hearings have focused on.

The funding levels in that bill are considerably higher than current levels. And if the levels in that bill are to be attained, additional revenues will be required.

This will entail coordination on the part of this committee with the Ways and Means Committee of the House. The program levels of H.R. 8648 would require an increase in the present gasoline tax of approximately 2 cents per gallon, in addition to extending the Highway Trust Fund beyond its present terminal date in 1979.

This subcommittee will move to marking up this legislation later this month, with a view toward completing this coordination with the Ways and Means Committee, and reporting the bill to the floor of the House prior to the May 15 date required in the Budget Act.

On this final day of hearings, we have with us the Secretary of Transportation, the Honorable Brock Adams, who will give us the administration's views on the transportation issue, and in particular, the administration's bill H.R. 10578, which was introduced in the House last week.

We will be cooperating with the Secretary and his staff as we proceed through the legislative process. That cooperation already has started with several meetings of the staffs on the technical aspects of this legislation.

The Chair would like to announce that, following the hearings today, the record will remain open for 1 week, so that we may hear from other interested parties concerning proposed legislation.

At this time, we are very honored to have with us, and the Chair is very happy to recognize, for whatever remarks he may wish to make, the chairman of the Committee on Public Works and Transportation, the Honorable Harold T. (Bizz) Johnson of California.

Mr. Chairman?

The CHAIRMAN. Thank you, Mr. Chairman. I am very happy to be here this morning to hear the Secretary of Transportation, our good friend, Brock Adams, and his very able staff present to us the highlights of the legislation, H.R. 10578, that was introduced by myself, Mr. Harsha, and other members of this committee.

I know that you are going to do a very thorough job with your subcommittee, Mr. Howard, in listening to what the Secretary and his people have to say.

I want to say at this time that our Transportation Subcommittee chairman has done an excellent job, all of last year, getting ready for this.

We have everything before us now, and as he has stated, he has his subcommittee hearings lined up, and the subcommittee will get right to work on the markup of the bill in a short period of time, and the staff and the subcommittee chairman and its membership will be preparing the bill for final markup in subcommittee.

Mr. Chairman, I do not want to take any more of your time. I know that you are very anxious to hear from the Secretary. I know he will do a very thorough job of explaining the administration's bill.

Mr. HOWARD. Thank you, Mr. Chairman.

As we have stated, the bill that was introduced last week, H.R. 10578, relates to highways, highway-related matters, and public transportation. And the Chair would also like to announce for informational purposes that we have received the administration's proposals on safety. That was introduced in the House of Representatives yesterday, and the number of that bill is H.R. 10656.

The Chair is happy to recognize, before we hear from the Secretary, the ranking minority member of the subcommittee, the very able Mr. Shuster from Pennsylvania.

Mr. SHUSTER. Thank you very much, Mr. Chairman.

Mr. Secretary, I would certainly like to join with the other members of the subcommittee in welcoming you here today. But I must say in all honesty that, after reviewing your transportation proposals, I am anxiously looking forward to hearing your explanations.

I do appreciate you taking the time to come here today to discuss this important proposal. This subcommittee held extensive hearings last year, as you know, on new transportation legislation, and heard a wide array of witnesses representing State and local governments, industry, and private citizens' groups, all of whom had valuable contributions to make to our deliberations.

I believe it is fair to say that, while there was a considerable amount of disagreement, we all share the same objective—that is, to develop a national transportation policy and programs that are

responsive not only to the Nation's needs, but to the desires of our citizens, consistent with national energy and environmental considerations.

I believe that we share these goals today, Mr. Secretary. Chairman Howard and I, as well as other members of this subcommittee, introduced legislation last year designed to make a start toward achieving these goals.

In many ways, the objectives of that legislation parallel the goals expressed in the legislation you have sent to the Congress.

We both seek to accelerate completion of the Interstate System, and to maintain it as the finest network of roads in the world.

We both want to establish an assured funding source for public transportation programs, to meet the transportation, as well as energy goals, of our big cities. But frankly, I am a bit disappointed that the administration's proposals do not include a proposal for a mass transit trust fund. While I would not support diverting highway dollars for mass transit construction, I would vigorously support money from the general fund or new energy taxes, should there be some imposed, being earmarked through a mass transit trust fund, and I know from media reports at least that you at one point believed in that approach, and I would be interested in hearing in your testimony today whether or not you still believe in a mass transit trust fund.

We both want to expand the size of the bridge program, in order to avert future disasters on the unsafe bridges of America.

We both share a deep concern for the safety of our citizens and seek to streamline the delivery of safety funds to where they can do the most good.

I am pleased to hear that your safety bill was introduced yesterday—I just had a copy of it handed to me about 3 minutes ago, so I really cannot comment on that yet.

Over the next several weeks, this subcommittee is going to work toward developing legislation to achieve these goals and objectives.

I expect the product of our work will embrace the best qualities of your bill, the best qualities of the bill we introduced last year, as well as other ideas and proposals which have come before this subcommittee from a variety of sources.

I certainly want to thank you again for your appearance here today, Mr. Secretary, and thank you, Mr. Chairman, for the time to make these opening remarks.

Mr. HOWARD. Thank you very much, Mr. Shuster.

If any other members wish to be recognized, the Chair would be happy to recognize them now.

Mr. CLEVELAND. Yes, Mr. Chairman.

Mr. HOWARD. The gentleman from New Hampshire.

Mr. CLEVELAND. Thank you, Mr. Chairman. I have a brief opening statement, but in the interest of time, I will simply ask unanimous consent that it be placed in the record at this point.

Mr. HOWARD. Without objection, so ordered. And, without objection, any members who wish to have placed in the hearing record an opening statement on this day of hearings, they will be made a part of the record at this point.

[Statements referred to follow:]

STATEMENT OF HON. JAMES C. CLEVELAND, A REPRESENTATIVE IN CONGRESS FROM
THE STATE OF NEW HAMPSHIRE

Mr. Secretary: An examination of your proposal—I have looked at it and will look at it some more, and I can't tell you yet whether the more I read the more I will enjoy or not—and it brings to mind a very appropriate observation contained in the national transportation report for 1974. I would like to quote from it and then comment on the quote because I think it reaches the heart of what we are going to be talking about here today.

It says: "The Federal Government faces a delicate dilemma in determining the amount of flexibility to build into transportation assistance programs. If state and local areas were permitted total flexibility in the use of federal transportation funds provided through current programs, the result would resemble revenue sharing with a minimum of federal control over the share of the nation's transportation systems.

"Inflexible federal programs, however, minimize the possibility of balanced transportation planning at the local level by dictating the categorical programs for which a municipality can most profitably spend its local dollars.

"Thus too much flexibility reduced federal direction in programs of national interest, while too little flexibility denies local governments the opportunity to develop transportation solutions tailored to area needs."

That sums it up, Mr. Secretary, there are national needs, needs best determined at the state level, and needs that can only be described as purely local. But, transportation systems being what they are, they cannot help overlapping. You have in your bill, tried to sort it all out in one way. Maybe it will do the job and maybe it won't, but you have sure tried and we thank you for that. We may not buy it all, but I feel confident that we can work out something we all can live with.

Just one more comment: Your recommendations for planning, and federal approval of the planning in urbanized areas of a million or more, reflects a lot of faith in the planners doing the planning and the planners advising you when you look at the plans. Maybe you know some planners I don't know. If you know enough to give you faith in that system, don't keep them all to yourself. Our highway boys are pretty good in New Hampshire, and so are the federal highway engineering-oriented planners we deal with. But I can tell you a few other federal agencies could well profit from the kind of people you're evidently prepared to bet on. So spread them around.

Mr. HOWARD. Mr. Secretary, we do have a copy of your prepared statement, and without objection that will be made a part of the record at this point.

[Statement referred to follows:]

STATEMENT OF SECRETARY OF TRANSPORTATION BROCK ADAMS

Mr. Chairman and Members of the Subcommittee: I am here today to urge you to take action to reform our highway and mass transit legislation, so that these programs will have the flexibility needed to meet the challenges that confront us. Last week the President sent to you and to your colleagues in the Senate legislation to improve the Federal assistance programs for highways and public transportation. He said in his transmittal message, "One of the Administration's important goals is to develop a well balanced national transportation policy, one which takes account of our increased sensitivity to the effects of transportation on the social and economic life of our cities and rural communities." The President described the reforms he proposes as changes that are "designed to make certain that the nation has an effective transportation system which uses energy more efficiently, enhances the quality of life in our urban and rural areas and helps expand our economy."

It is a pleasure for me to appear here this morning to discuss our proposals with you, to tell you what they are and how we got there.

One of the first things I did as Secretary of Transportation was to establish a task force of senior DOT officials, chaired by the Deputy Secretary, to review our existing highway and public transportation programs with the broadest possible spectrum of State and local officials and interested organizations and individuals. We found a number of things that were good and which

justify our spending some \$10 billion Federal dollars a year on our highway and public transportation programs. Our Interstate highway system is a tremendous achievement which is the envy of the world. Our road and highway network generally is comprehensive. While the death toll on our highways is still much too high, important safety improvements have been made in recent years. The relatively new Federal programs supporting public transportation have helped to reverse the decline of transit systems.

But we also heard many criticisms of how our programs are structured, and we found that they need significant improvement. What we have today is really a crazy quilt. We have an excessive number of separate categories of assistance. We have different recipients for our highway and transit programs. Assistance for transportation planning is fragmented. Federal-local matching ratios are a hodge podge of numbers: 70/30 for most highway projects; 80/20 for transit; 75/25 for bridges; 90/10 for Interstate highways. However, if a city exercises the option the law provides to withdraw an Interstate segment and use the money for other projects we go back to 70/30 for highways and 80/20 for transit.

In other words, many of our programs are outdated, inflexible and arbitrary. Transit and highways are too often viewed as rivals. Decisions are too often made to fit Federal requirements rather than to fill local needs. We must redirect our highway and public transportation programs and gear them to an era of scarce dollars and costly energy, changing rural requirements and growing urban needs. These are concerns we heard time after time as we travelled the country talking with concerned officials.

The Administration's legislation will authorize more than \$50 billion over the next five years for transportation planning and highway and public transportation investment and support. It will remove the present arbitrary restrictions that hamper our programs and will give State and local officials the ability to plan and use Federal assistance to meet their transportation priorities. It will redirect transportation planning to meet the challenges of energy scarcity and other national social objectives. And it will restructure our mass transit assistance program to provide a more regular and predictable funding mechanism which will allow better planning and more programming flexibility to meet the public transportation needs of our localities.

PRINCIPAL OBJECTIVES

The legislation's principal objectives are:

- To strengthen and consolidate comprehensive transportation planning requirements and apply the same planning requirements to the highway and transit program;

- To simplify funding categories and increase the flexibility of their use;

- To provide the same Federal share-80-percent-for both public transportation and non-Interstate highway programs;

- To provide predictable funding sources to meet public transportation needs; and

- To accelerate completion of the Interstate System.

Our proposals cover seven broad program categories: planning, the Interstate program, the Primary highway program, assistance for large urban areas, assistance for small urban and rural areas, safety and bridge repair. I would like to spend a few moments highlighting our principal proposals in each of these areas.

PLANNING

A first and critical step is to bring transportation planning efforts together so that planning focuses not just on highways or on transit systems but on all the transportation modes and how they can best be used together. Equally importantly, transportation planning must look beyond transportation itself. Transportation should be a partner in helping to meet other national and local objectives. Energy conservation, for example, will always have to be in the forefront of our minds, as will air quality and accessibility to employment.

To enable transportation planning to do its job, we propose to combine the now separate highway and transit planning funds. These funds will be apportioned to States and metropolitan planning agencies by a formula which we will develop. Such an administrative formula has been successfully used

by UMTA to allocate planning funds for the last three years. These funds will be available for a broad range of transportation planning activities and will no longer be identified as highway or transit planning dollars. This is a key to the comprehensive multimodal planning we must have if we are to refocus our transportation programs.

The existing law requires that there be a transportation planning process for urbanized areas—those with a population of 50,000 or more. To encourage a broader regional look at transportation needs and issues, statewide planning, including planning for small urban and rural areas, will also be required after October 1, 1980.

For the major metropolitan areas, those of a million or more, we require that their transportation plans and programs be submitted to the Secretary for substantive review. This is a new requirement and a very important one. Transportation can and should play an important role in the regeneration and maintenance of the vitality of these urban centers, and full integration with the areas' housing, employment, energy conservation, air quality and other objectives is vital. This review will serve as an early warning device for individual projects which may face disapproval at a later stage of development. Most importantly, it will ensure at both the local and the Federal level that we do not lose sight of the fact that transportation is not an end in itself but is part of a broader picture.

INTERSTATE

For the Interstate highway programs, our proposals have a number of objectives. Over 90 percent of the Interstate highway system is now open to traffic and we want to accelerate its completion. The proposed changes will focus our efforts on closing those essential gaps in the system which impede intercity travel. Another goal is to ensure that the Federal funds available for this program are used in the most efficient way and that we do not have funds tied up in a State which cannot make immediate use of them while another State is ready to go but has run out of available funds.

We propose, therefore, that the formula for apportioning Interstate funds be modified so that half will be apportioned on the basis of essential gaps that need to be finished and half on the basis of total system completion. Funds apportioned on the basis of gaps will have to be used on gap projects.

To hasten completion of work on the Interstate, States will be permitted to borrow against their following year's apportionment if their current funds are obligated. Finally, the basic period of availability of the funds will be shortened from four years to two, with unused funds being reallocated to other States.

Our goal is to complete the Interstate System by 1990. To do so, we need some firm benchmark dates. Our proposals require either that Interstate segments be withdrawn, or that the environmental review process be finished, by October 1, 1982. Further, construction will have to start on all unfinished Interstate segments by October 1, 1986.

As you know, existing law allows the withdrawal of non-essential urban Interstate segments and the use of equivalent amounts of funds for highway and transit projects. I referred earlier to the problem that results from these transfers; in effect, there is a penalty attached to such a transfer since the local share doubles or triples for substitute transit or highway projects. The amount of Federal money is the same, but we do not think the level of Federal match should bias local decisions. Therefore, we propose that substitute projects, whether highway or transit, receive the same 90 percent Federal share as the withdrawn Interstate project.

RRR

To ensure that our superb Interstate System, and the tremendous Federal investment it represents, does not deteriorate, we recommend the continuation of a separate program for Interstate resurfacing, restoration and rehabilitation. We have adjusted the apportionment ratio to give more funds to those areas where travel is the greatest.

THE PRIMARY SYSTEM

Let me now move to our proposals for the primary system. The changes we recommend here are designed to enhance State planning and programming flexibility. First, we consolidate a number of narrowly focused assistance cate-

gories into a unified primary program. Second, we allow 50 percent of funds apportioned for the proposed urban highway and small urban and rural programs to be transferred to the primary program, and vice versa.

URBAN FUNDS

For our large urban areas, we are proposing two formula programs and one discretionary program. The two formula programs—one for highways and one for public transportation—will be available for urbanized areas of 50,000 or more; the Federal share for both capital highway and transit projects will be 80 percent. Current law permits highway funds to be used for transit projects; we recommend increasing the flexibility to permit 50 percent of the transit funds to be used for highway projects. We will have, in other words, two compatible and very flexible programs which State and local officials can use effectively to meet the transportation needs of their own urban areas.

On the transit side, to provide more predictability we shift a substantial portion of funds from the discretionary to the formula program. These formula funds will be the source of assistance for all routine capital activities such as rolling stock replacement and system modernization, as well as for operating purposes including commuter rail expenses. The discretionary program will be restricted primarily to major fixed guideway construction, major bus fleet expansion, and joint development projects.

The apportionment formula for the transit funds will be adjusted to account for this expanded use and to make it more sensitive to large urban area needs. It will be based on factors of population, population weighted by density, commuter rail train miles, fixed guideway route miles, bus seat miles and a factor for the replacement of buses. These factors were chosen to closely reflect the actual routine capital needs of cities with all types of transit systems, including the system modernization and rolling stock replacement needs of cities with rapid rail and commuter rail systems.

To assure that sufficient formula funds are available to meet routine capital needs, we place some limitations on the use of these funds for operating expenses. First, only funds equal to the amounts apportioned on the basis of population, population density and part of the commuter rail factor can be used for operating costs. Second, not more than one-third of total operating expenses can be paid from Federal funds. These limitations replace the existing requirements that a local matching share be provided and that local efforts to support transit services be maintained at past levels.

The urban highway formula program will be apportioned on the basis of urbanized area population. These funds will be eligible for projects on any road or street not on the primary or Interstate systems and for public transportation capital projects.

We propose that, beginning October 1, 1979, Governors and local officials designate one or more recipients for urban highway funds in areas with a population of one million or more. This sort of "designated recipient" process has worked well in the UMTA formula program, and we believe it will enable these major metropolitan areas to focus Federal assistance more effectively on overall urban development objectives. We expect this change to increase emphasis given to projects which use the existing system more effectively, thus serving energy, environmental and urban revitalization objectives.

The discretionary transit grant program will be focused on major mass transportation investments, including the construction of new fixed guideways, the extension of existing fixed guideways, major bus fleet expansions and joint development projects. These investments provide important impetus for urban revitalization efforts. Because of their size, complexity and cost, they require discretionary funding and careful Federal review.

SMALL URBAN AND RURAL

While we move to provide a better system for meeting the transportation needs of our big cities, we must never lose sight of the needs of our smaller cities and rural communities. There, too, we must provide greater ability for State and local officials to determine what transportation solutions best satisfy their needs. Our proposal is for a consolidated program providing assistance for all highway and public transportation projects in these communities. For the first time, other than in connection with demonstration projects, we will provide operating assistance for public transportation services in these areas.

The funds for this program will be apportioned to the States on the basis of small urban and rural population, area and postal route mileage. At least 10 percent of the funds will be earmarked for public transportation purposes, to establish or improve service in small urban and rural areas. The Federal share for transit operating costs will be limited to one-third of the total costs. As with the urban highway program, projects on any road not on the Interstate or primary system will be eligible for funds under this program.

The funds for this program will come from the Highway Trust Fund, but the Trust Fund will be reimbursed from the General Fund for any operating costs. Thus small urban and rural areas will have the same flexibility in the use of Trust Fund monies as large urban areas have under current law.

This consolidated assistance program, when coupled with the strengthened requirements for Statewide transportation planning will make transportation an active agent in improving the quality of life and conserving energy in our small urban and rural areas.

SAFETY

Highway safety is a critical area of concern. We propose to consolidate a number of existing programs into a single highway safety improvement program for all public roads. This will assist the States in increasing their effectiveness in improving highway safety. To insure that the pressing safety problems of roads not on a designated Federal-aid highway are addressed, at least 30 percent of these funds will be for use on those off-system roads.

Our legislation would also permit the purchase of truck weighing scales from Federal-aid highway funds. This will help States to improve their vehicle weight enforcement programs and will have important safety benefits.

Mr. Chairman, in addition to our proposals for the highway safety component of our Federal-aid highway program, we have also sent to Congress proposed legislation to strengthen our State highway safety programs and reduce restrictions on the States' use of Federal highway safety grant funds.

After a comprehensive review of the highway safety program, we forwarded a report to Congress on July 1, 1977, which recommended that a number of fundamental changes in the States' highway safety programs to be accomplished through legislation. Our proposal represents a thoughtful consensus of the future form this program should take.

While considerable progress has been made in the Highway Safety Act's first 10 years, the detailed structure of the existing statute has become outdated and overly rigid. Currently, the States are directed to have highway safety programs in accordance with numerous uniform standards which the Department issues. If a State's program does not conform to these standards, the Secretary is directed to reduce the State's Federal safety program funds.

The major change we propose is to move away from reliance on mandatory standards, which we believe have achieved their purpose. The States are now able to draw from their own experience to identify problems, devise remedies, and evaluate results. Uniform Federal requirements would still be retained in such key areas as data collection and analysis, driver licensing and vehicle registration, and rules of the road and traffic control devices important for safe interstate travel.

The bill would also establish a program of innovative project grants in place of the present program of incentive awards which are based on annual reductions in fatalities in each State. These reductions might or might not be the result of programs initiated by the States, and we think the approach most likely to act as a true incentive is one in which innovation is specifically encouraged by being the principal basis for an award. This change will provide a more direct motivation to the States to improve their highway safety programs.

Up to 25 percent of funding would be separately apportioned for high priority safety programs, such as increased enforcement of the national speed limit. Speed limit enforcement funds would respond to the urgent and repeated requests from the States for assistance in this area.

The bill also establishes a framework for measuring compliance with the 55 mile per hour speed limit, by providing new criteria focusing on the actual speeds traveled by motorists. The States would be subject to a 5 to 10 percent penalty of some Federal-aid highway funds for failure to reduce actual speeds. A schedule would be established for the States to reduce the speeds traveled by their motorists to specified levels in successive years, beginning in calendar year 1978. These changes would provide a fair but strong inducement to the

States to improve their enforcement of the national maximum speed limit which has proven to be such an important life-saving tool.

BRIDGES

Finally, Mr. Chairman, bridges too, are in need of our immediate attention. Our proposal more than doubles funding for bridge repair and expands the program to cover bridge rehabilitation in addition to the bridge replacement currently allowed. This will improve the cost-effectiveness of the program. Up to 30 percent of the bridge funds will be available for bridges not on one of the designated Federal aid highway systems.

Those are the highlights of our proposals. It is comprehensive package that developed from a comprehensive review of our current programs and the most extensive consultation with the transportation community ever undertaken by the Department.

Mr. Chairman, I would like to make a few brief comments about H.R. 8648, the Surface Transportation Assistance Act, which you have introduced. There are a substantial number of similarities between the Administration bill and the Surface Transportation Assistance Act. Certain of the concepts in the Administration's proposal were in fact borrowed directly from H.R. 8648. The Surface Transportation Assistance Act is a very thorough and carefully constructed approach to the problems we face.

Both bills would provide a much greater uniformity for the Federal share for highway and transit projects. Both bills have settled on 80 percent as the appropriate percentage for the Federal share. The Administration bill extends this uniformity to a greater number of programs, however.

Both bills seek to accelerate construction on the Interstate. The Surface Transportation Act would allow States that have unobligated balances that are insufficient to fund ready-to-go Interstate projects, in effect, to borrow from States with unused Interstate apportionments. The Administration bill would allow States to receive advances from their next year's apportionments and also contains several other provisions to accelerate completion of the Interstate system. Both bills also are designed to meet the crisis of our nation's bridges.

There are also differences between the bills, but I believe we should handle these in the question period so I can respond to the points of concern to the members. But it is clear that both the Administration and this Committee have the same objectives of improving our highway and mass transit programs to make them more sensitive to our current and future needs. I am sure that with this common objective we can work together to produce transportation legislation that will greatly benefit the nation.

Mr. Chairman, it is said that for everything there is a time and a season. If so, the season for a new approach to Federal transportation assistance has arrived. This must be an approach that recognizes the new realities, an approach that permits local, State and Federal governments to meet their objectives more effectively. The Administration's proposals embody a program that addresses these important issues in a responsible and realistic manner.

This concludes my prepared statement. I would be happy to answer any questions you or other members of the Subcommittee may have.

Mr. HOWARD. Mr. Secretary, you may proceed.

TESTIMONY OF HON. BROCK ADAMS, U.S. SECRETARY OF TRANSPORTATION; ACCOMPANIED BY JOAN CLAYBROOK, NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATOR; RICHARD PAGE, URBAN MASS TRANSPORTATION ADMINISTRATOR; WILLIAM COX, FEDERAL HIGHWAY ADMINISTRATOR; TERRENCE BRACY, ASSISTANT SECRETARY FOR GOVERNMENTAL AFFAIRS, MORTIMER DOWNEY, ASSISTANT SECRETARY FOR BUDGET AND PROGRAMS; LINDA KAMM, GENERAL COUNSEL

Secretary ADAMS. Thank you, Mr. Chairman, Chairman Johnson and Chairman Howard.

We are all here before you this morning because I consider this the most important day in transportation legislation that I have spent this year, and it may well be the most important day that we all spend during the next 3 years.

Mr. Chairman, as you are aware, that we have spent the last year, just as you have, talking with Governors, mayors, transit authority people, and all of those who are interested in the transportation system. The people at this table have been throughout the country. We have held meeting after meeting, just as you have held hearings. And we have been meeting with your staff. In fact, as you know, people from the Department spent 3 days with your staff last week.

So the bill I am going to be talking about this morning is not strange to anyone. But my purpose in being here this morning is to review our proposals for the members who have not seen them in their final form.

I would like to first introduce the people who are with me: our General Counsel, Ms. Linda Kamm. Many of you know Ms. Kamm from her time on Capitol Hill. Our Assistant Secretary for Congressional Affairs, Mr. Terry Bracy, who will be coordinating our efforts in working with your committee. The Federal Highway Administrator, Mr. William Cox.

To my immediate right is not only budget officer, but Evaluation Assistant Secretary for Budget and Programs—who evaluates our programs—Mr. Mortimer Downey; our Administrator of the Urban Mass Transportation Administration, Mr. Richard Page, and the head of NHTSA, our whole safety operation, Ms. Joan Claybrook.

I might state, Mr. Chairman—and Mr. Shuster—the reason that the highway safety bill came up yesterday was that we were not certain until I received a call from the chairman that you wanted to include it in this piece of legislation. When we were informed of that, we expedited its submission. We thought you might want to take it in two steps. We understand now that you want it to be a part of the legislation, and as far as we are concerned, that is a very good way to proceed.

Mr. Chairman, I appreciate your putting my statement in the record, and, therefore, I will not read it word for word. But I do think it is very important that all of us—and I am speaking now of all of us as a collective group in the Federal Government that address transportation problems—understand that we in the administration put enormous importance on this bill—enormous importance, Mr. Chairman, because you and I have shared a philosophy for many years that public transportation legislation and highway legislation must be brought together, because in most of our major city areas and in our rural areas, too, the people who are planning and working on transportation must address both highways and public transportation.

We are trying, with our proposals, to provide a system which allows the Governors and the local authorities to use their money better.

One of our main goals in this—and this is the reason underlying our proposals for combining programs, and providing Secretarial

discretion in one case—is to enable transportation to support, with increased sensitivity, the social and economic goals of a total area. We all realize now, after living through the fifties and sixties, that transportation is part of the lifestyle of an area. If you are in a rural area, and there is no transportation, your economy collapses; if you are in an urban area, and you cannot move people and goods, your whole area will die.

The way we build transportation helps to create the lifestyle of each area. Highways and public transportation systems have an enormous impact.

Recognizing this impact, we established a task force, just as you are holding hearings, Mr. Chairman, that went throughout the whole country, to determine what was needed. Our findings are reflected in this legislation. We found many good things. We think that the manner in which we have been spending \$10 billion a year has been basically good. Our Interstate System is something that is the envy of the entire world. But we found much that needs to be improved. We must address highway safety problems even more effectively, for example, and we must be very certain that the new Federal programs supporting public transportation really do stop the deterioration of our public transportation systems.

One of the reasons for our legislation—and I hope the members will consider this very carefully in the markup and will adopt the structure that we have proposed, is that we have a crazy quilt of programs under the present structure.

We have far too many categories of assistance. They all had a good reason when originally created, but now they artificially drive the people who are putting the programs together, the State and local and other officials who receive these funds. They have money in one category where they do not need it, and they cannot get it to another category where it is needed. And for that reason, we are not using our money well. So we have reduced the number of categories. This change in structure can improve the way the money flows out.

Another basic problem with our present programs is that planning is fragmented. We want to avoid having two groups planning in the same area, coming up with different plans, one in highways and one in public transportation, and then coming into differing parts of the Department with their plans. Too often we find that nothing moves because one plan is in effect holding up the other.

We also found that the difference in matching ratios is a great problem, that local officials try to shape their programs to fit the Federal formulas: 70/30 for highway projects, 80/20 for transit, 75/25 for bridges, 90/10 for interstate. Also we found, Mr. Chairman, that in the interstate transfer mechanism where people were deciding whether to shift funds from interstate highways to other highways and public transportation, that even if you really had a problem in your city on, say, local streets or on the primary system, the officials really could not justify to their local people shifting money into that area because the Federal share percentage went down so badly.

The thrust of our legislation here is to make the Federal share for a substitute project the same as it is for the interstate project, 90/10, so there is no tilt in the formula which could affect what the local people decide.

We do not want highways and public transportation to be rivals any more. We do not think they are. I think we have lived through that period of time. We think that the time has arrived for a marriage between highways and public transportation, and that is why I consider this day so terribly important.

For funding levels, we propose \$50 billion over 5 years, and it will be more than that, actually, because we have only authorized two programs to go out into the 5th year. It will be, in any event, well over \$50 billion for the next 5 years, for transportation planning and highway and public transportation improvement.

The people who have been receiving money in the past under the various programs are not going to suffer under these new ones, because we have stepups in these programs. What we are trying to do is make the structure better so that the money can actually get out and be used effectively.

Also, I want to emphasize that we have tried in this proposal to meet the President's energy goals. We have a problem and I know each one of you, as do I, looks in the paper every day and sees the amounts that we are having to send abroad to pay for imported petroleum at the present time. We are trying to provide alternatives for the American public, so that we can begin to reduce petroleum use, because that flow of dollars out of the United States for petroleum is causing our trade imbalance, and it means that everybody else in this economy has to work that much harder to get the money to pay for the petroleum we are importing.

The objectives of our legislation are set forth on pages 3 and 4 of my statement.

First: we have strengthened and consolidated the planning process. In our legislation we propose one planning program, rather than a separate one for highways and a separate one for mass transportation. I will, if you want, provide you with proposed organizational charts showing how the program would be handled administratively.

Second: We have greatly simplified the funding categories and increased the flexibility of their use. I will give you the details in a moment, but I can say we are down to less than ten major categories now, and that is for both the highway and the public transportation programs.

Third: We have gone—the chairman had suggested this in his bill, and we have amplified on it—to one funding ratio for programs other than in the interstate area. We establish them all at 80/20.

Fourth: We have tried to provide more predictable funding sources to meet public transportation needs. Yes, Mr. Shuster, I support the idea of having a mass transportation trust fund. I was hopeful that the energy legislation would have been finished prior to now, and that we might know what it looked like. I came before this committee to support, you will remember, a gasoline tax increase that would be available for public transportation.

The reason we did not include that proposal in this legislation was because we lost that particular vote. We only got a total of 82 votes at that time, and I concluded we needed a little more thought and work on that before I came up and proposed it to you. That is the reason why it is not in the bill.

We have placed in the bill an assured authorization level out 5 years, so everybody could plan, and a rolling 2-year appropriation. This was the best we could put together, absent an assured revenue source for construction funding. Our proposal for assured funding is directed toward construction. I think we should continue annual appropriations for operating assistance, because the appropriation process needs to review that.

In my statement, we discuss our proposals for transportation planning. We will focus in the planning process on the whole system in each area and transportation planning will consider the national and local objectives in each particular area. Transportation planning must have that scope, because we are now under attack, as many of you know, in many areas, for the impact of transportation on air quality, for whether or not the transportation system really promotes the economic development of the area, and whether it connects people with jobs.

We will apportion the funds for planning to the States and the metropolitan planning agencies by a formula. If each State ends up in the next 2 or 3 years with one State department of transportation, and they all decide that they want to operate that way, that is fine by me. But we have not arrived at that point in the local areas yet. Our proposals build on our administrative experience in the highway and transit planning within these programs in the last 5 years and put consolidated and comprehensive requirements in legislative form. It will work. We hope our proposals will be enacted.

One feature of our proposals is to put emphasis on rural areas. In area after area we heard testimony that rural areas want some help. And we have provided it in this program. The first step is to require transportation for rural areas, with consideration of both public transportation—its complete lack of it in many of those areas—and highways. We have suggested the planning process for rural areas be managed by the State, because we understand that local county governments, or local cities that are very small, cannot gear up the whole necessary apparatus. But we have provided, and we think it should be understood, that the local people will have their input into that process.

Turning to the other end of the spectrum, the large metropolitan areas, we have stated that in areas with populations over a million, governors and those areas agree on who the recipient or recipients for highway funds should be, so that there is one or more designated recipients for the Federal Government to deal with. In a great many of those one million and above areas, local organizations are doing the planning already and are doing a great deal of the implementation work, and they are the ones with whom we deal. What we are trying to do is say to the State and local governments, "Put your act together, so we know who to deal with," and the Governor and the local officials will sign off on that.

The second major area our proposals address is Interstate program. I know this committee's great interest in this program. And again, people have been concerned about, whether we are proposing something that is going to injure the interstate program. We are not.

I think it is terribly important, and it is why I consider this such an important day in transportation, that the interstate program emphasis shift. It is now over 90-percent complete, and, again we are in agreement with the chairman's proposition—we have got to focus our efforts on closing the essential gaps in the Interstate System. We have got to concentrate on finishing up the parts of that system that are necessary for intercity travel.

We have proposed in the legislation—and I think this is very important—that the apportionment formula be based 50 percent on closing the gaps and 50 percent on completing the entire system.

Everything we propose is directed toward getting the system completed, leaving it at the 90/10 Federal share and being certain that we are expediting completion.

We have also, Mr. Chairman, picked up on the committee's thrust, as to how to get the money to the States that are ready to go, as opposed to having money tied up in States that are not ready to go. I have been reluctant about the bonding provision, because it requires spending so much money for interest. What we would like to do here, since we have a trust fund available, is to allow States to borrow into their next year's apportionment, and to speed up the cycle of re-allocating funds from 4 years to 2 years. This will make available money flow into the system to States which are ready to go and haven't the money available now, and will get those gaps completed at a much faster rate.

Our goal is to get the Interstate System completed by the year 1990. I know various kinds of deadlines have been imposed in the past. I remember one we all voted for that said we were going to complete it by 1972. I wish it had been completed in 1972.

Our legislation sets up a very sophisticated system, one which is a carrot-and-stick operation. We require a decision to be made on each interstate segment, go or no-go, by Oct. 1, 1982. We have been through EIS's, we have been through design problems, we know about how long these things take. We want everybody to have decided by that time either that they are completely committed, which means they are through with the EIS process, the segment is on the system, it is a "Go" proposition, or that they want the segment off the system, and the funds are transferred for other uses.

Further, construction has to have started by Oct. 1, 1986. I know those sound like long times away, and I am rather impatient about the whole thing, myself. But in the cycle of getting this done, I want it to really happen. The timetable we established allows us to move forward to completion, so that it will happen by 1990.

We really are trying to encourage people to make up their minds. We are trying to get away from "ice-boxing." What I refer to as "ice-boxing" is where people leave their segments on the system, let the dollar value associated with them build up in size, and wait until the last possible moment to transfer. We would like to stop that practice, because it neither completes the interstate nor gets on with the other projects in the local area.

We have also provided in this legislation that interstate transfer projects will receive a 90 percent Federal share. This means that the officials in that area can decide whether they want one interstate segment, another kind of highway or public transportation, can make that decision without a penalty, and then get on with it. That is the thrust of our proposal.

In my statement is a short paragraph, but a terribly important one, Mr. Chairman. We know that during the 1980s, we have got to preserve the Interstate System. Therefore, we are beginning to strengthen the so-called 3-R program. We are aiming at the areas where the travel is the greatest. We cannot allow the right-of-way of the interstate to collapse, as we have seen right-of-way in other transportation systems collapse.

I think we should plan and start on it right now, Mr. Chairman, and members of the committee. We recognize that no longer in this country are we going to build transportation systems, go through a large construction program, be very proud of it, and then walk away from it and let it collapse. This proposal reflects that new kind of approach.

The fourth category that we have—and what I am doing is showing you how we squeezed the categories down. The kinds of things that are in separate categories now are in our enlarged and consolidated programs, but we ended up with less than ten major categories.

The fourth one is the primary system. What we have tried to do there is to give the States a chance to decide where to put their Federal aid funds. And we allow 50 percent of the money which is apportioned into the proposed urban highway or small urban and rural programs to be transferred to the primary highway program. And vice versa.

The reason for this increased transferability—and I know all of you have heard the same thing from the various places, as you have traveled in the United States—is that every State in the United States is different. Some of them have a real primary problem, some of them have a small urban and rural problem, some of them have a major problem. We are trying with our proposal to say “We are going to be certain that you spend a certain amount of money on each of these, but we are giving you some flexibility to beef up your program where you need it.”

Some States need bridges; others do not need bridges. Some States have a real problem of deterioration of the primary systems others have a problem of building new stretches of highway. That is what the primary system is for.

As for our proposals for funding transportation needs in urban areas, the basis is to be certain that we can go from one program to the other. The urban highway program and some of our urban public transportation programs have been stuck. We have made the money available, we have authorized, and we have appropriated, but it has not moved through to the urban area. Our proposals established two compatible and very flexible formula programs—one for highways and one for public transportation—so that the State and local officials can determine what they want to do.

In the public transportation area, and we think it is very important, we are trying to build a formula approach to public transportation assistance, as well as having a discretionary fund that floats on the top. This formula approach that matches and builds on our good experience in the highway program, and provides a system where people know what they are going to get and can project out in the future for the things they know they have to do—whether it is repairing commuter railroad, buying some buses, or fixing a section of highway. Under our proposal, State and local officials will know that there is a certain amount of money available according to a formula, and they can move on projects according to the needs of their area.

I have in my prepared statement what that formula is. We took that formula, and we worked back to what people are doing now. You will notice that the apportionment formula in the transit funds is population, population weighted by density, commuter rail train miles, fixed guideway route miles and bus seat miles.

These kinds of things show the usage and the need and the demand that the areas will have, and our proposal provides enough funds by formula so that officials know what they are going to get in future years, and can plan how to spend it.

In the urban public transportation formula program, we put a limitation on operating expenses. Two-thirds local, one-third Federal of the total operating expenses. That is your lid, rather than the complicated requirements that we have now. Thus in each area we have tried to meet a commitment to provide operating assistance, but we have a much simpler way of enforcing the necessary limit.

I have already mentioned that we have asked in our bill, and I hope it will be part of the total bill that comes out, that the Governors and local officials of areas of one million and above get together and tell us who is to be the designated recipient or recipients for urban highway funds.

You can see that our highway and transit proposals fit together. You plan for both programs jointly, and then you send your money out on a comparable basis.

Now, we know that there always needs to be a discretionary public transportation program, because—and it is on pages 10 and 11—there are certain major projects in the United States that the Department of Transportation and this committee, in its oversight functions, are going to want to focus on. These are major rail projects, major bus expansions, or joint development projects. So we have discretionary funds left for those.

Finally, in the sixth category, the small urban and rural program—which is on page 11 and 12—for the first time, we have done what I think should have been done for many years. As we heard around the country, the small urban and rural areas are saying, "Treat us as you are treating the larger cities. We would like to have the right to have some amount of money for public transportation."

They are not trying to say to us that they need massive transit programs, or that some great new technology is going to whiz everybody through light-density areas. But they do have the problem that there has been a collapse, in many parts of the United States, of

public transportation in the rural areas. The rural caucus members have been to see me, and they very much want this. This is the kind of thing that we should address. Under our proposal, funds will be available for highways and for public transportation. And, for the first time, if these areas need some transit operating money, they will get the same kind of treatment, the two-thirds/one-third, that we give to the other areas.

We know that in most cases, the local areas are going to want highways. But there are a significant number of them that want to have some flexibility to do something else. So we have provided that flexibility.

In safety, we have both the highway safety program, which is in the construction phase, and the other bill, which deals with vehicles. Both are now being made much more simple to administer and much easier for the States to use.

We go to one category, where we say, that "Here is your safety money. Give us your plan, and we will review it." We have reduced mandatory categories, and we will approve or not approve the plan, so that States can have a unified approach to safety.

We have said that 30 percent of the safety construction fund should be used on off-system roads, because we know that there is a problem there, as well as on the Federal system roads.

Our legislation also allows us to do some things which we should have done years ago to promote State programs for enforcing vehicle weight limits: buy the weighing scales.

In the State safety grant program—and I have outlined this on 13—we want to move away from a series of rigid standards. As you will see listed the only mandatory things we have kept are those that have a national interest. For instance, data collection—we have to have everybody send in the same kind of data, or we won't have any basis for comparison and—driver licensing has got to be the same, because everybody is mobile in this society, and they go from State to State. For vehicle registration, the same is true—if you are going to keep track of vehicles, if you are going to handle theft problems, and so on, you need uniformity. And finally, the rules of the road and traffic control devices. All of these are things that have a national interest, I think we can agree. I have set them out on page 14, and I hope that we will have national standards in these areas.

Outside of these areas of national interest, our proposal is divided into two packages, which is, for States, to come up with their plans, show us their innovations. Each State is different. Some have broad expanses to patrol. Others have congested areas. We will sign off on the State plans.

And we have put in an allocation for enforcement of the 55-mile-an-hour limit, and also, as I stated on page 15, a framework for seeing that there is compliance with a penalty provision if there is not compliance.

I have used the sanctions that this committee placed in the bills before, with the various States, so that we have kept in place the laws on 55. The saving in petroleum, the saving in lives is just enormous. And we have used the existing authority.

But now we have got a compliance problem, and the safety bill which is before this committee addresses that by setting criteria for

measuring actual compliance. And we are putting additional money into 55-mile-per-hour enforcement to help the States to do this.

Mr. Chairman, our eighth category is one that I know you are very interested in, bridges. The proposal we have more than doubles funding the bridge replacement and repair, and makes repair as well as replacement a possibility. We should not be in the position that we only take care of bridges after they have fallen into the river.

I think we are all in agreement that we cannot solve the bridge problem in this bill. There just is not enough money anyplace to handle some 40,000 bridges in the United States, which are on-system, that are in need of repair.

But we are moving, to address the problem, to say to the States, "Pick where your problems are." We have added money to this program so that we can begin it, to bring those bridges back up to a point where they are safe.

Now, Mr. Chairman, I have compared our proposal with your bill 8648, and as you can see from my comments, we have tried to make this a compatible exercise. The staffs, and the local officials, and the Governors and ourselves, we are trying to put this all together in one. Both bills settle on 80/20. Both bills move to accelerate the interstate. Both bills recognize the crisis in the Nation's bridges.

I know there are differences in the bills. For one thing, I know that: H.R. 8648 maintains a number of separate categories. And I understand very well the process of the Congress, and where those came from, and that people are concerned.

I just think that for everything there is a time and there is a season. And I think today is the time and the season, and I think it means a lot to the American public, Mr. Chairman, if this committee recognizes it, to move from the old system we have had to a new system.

I think both of these bills can do it. I am hopeful we will participate. The people that are at this table, our staff people who are sitting behind me, are fully available, Mr. Chairman, to each member of this committee, and to the committee as a whole, as you are working on this bill.

We would like to see a bill come out this year, Mr. Chairman, that recognizes that there is a new day, there is a new season. We hope we can work together to develop this bill.

That completes my prepared remarks, Mr. Chairman, and I appreciate the time and attention the committee has given me.

Mr. Howard. Thank you, Mr. Secretary. On behalf of the subcommittee, we certainly want to congratulate you on your fine statement, clear and concise, explaining the proposals that the administration has sent to us. Certainly, you do bring out the fact that there are many, many areas of the administration that go completely hand in hand with what the subcommittee has been talking about for the last 3 years.

And in general, I would say, and overall and basically, we are moving in the same direction, in many, many aspects and areas of the bill.

I have just a few questions. I will try and keep them brief. And I would like to let the members know that if we do cut off questioning

at a certain time, we do intend to get back to the members, so that they will have the total time that they need, perhaps not always at one time.

And Mr. Secretary, the reason we did ask you to appear today is because during these months, on Wednesdays, the House does not meet until 3 p.m., so we hope that we will be able to have you here for a full discussion.

Just one particular question in the mass transit field. In regard to section 3 transit funding and present commitments to various areas of the country that have been made in the past, I wonder if you might be able to explain how or if these areas will be able to get additional funding beyond their present commitment under this new legislation.

We could take an area in the country—say, New Jersey. The present \$400 million commitment, I wonder, how would this be handled, and when could that State get additional funds for purposes other than those that are in the present \$400 million commitment?

Secretary ADAMS. Mr. Chairman, I might state that one problem we have is that they have not spent any of the \$400 million yet—

Mr. HOWARD. They have been ready for quite a while.

Secretary ADAMS. And we have it there. We will issue letters of intent that will cover those outstanding balances, as they come in with their projects.

Even with the carry-forward which we have, we feel that there is enough budget authorization in this bill to allow us to plan with the State and local officials and discuss new starts with them. In each case, as you know, we have to wait until the State and local officials bring up their projects, and we can then say yes or no.

In New Jersey's case, the money is there. We will issue a letter of intent that will confirm that. And then, as they come in with whatever their next proposal is, there is sufficient authority for us to proceed. As we all know, this is a long-term business.

Mr. HOWARD. Can proceed forward beyond that money?

Secretary ADAMS. Yes.

Mr. HOWARD. I would like to know if you could explain for a moment, the intent of the bill with respect to the intercity public transportation, because we have a situation in this area where it says 10 percent must be utilized in public transportation. And that could be waived, I believe, so it could be no percent.

This comes to a total possibility for these transit programs in your legislation of about \$76 million. And in the bill that we have, it is about \$150 million. I wonder if you could tell me the intent on this percentage, and the factors that could be waived, and compare it to what we are attempting to do?

Secretary ADAMS. The percentage, Mr. Chairman, is a minimum. We are not saying that they could not spend more than that if they want. What we say with the minimum is we expect each State has projects in the rural and small urban areas which need help.

We put a minimum figure in there so they would know that we really meant that the public transportation needs of these areas should be addressed. Then, as the States come in, they can decide whether they want to go higher than the minimum. If they want to

use \$150 million for transit projects, they can go to \$150 million under our program.

Mr. HOWARD. Well, we do create problems on two sides, just as any possible merging at the present time of UMTA and highways would give. On the one side, the people feel that they will not get a fair shake, and a great deal of money would be taken out of the highway program, going way beyond the 10 percent. This is an objection and a question that people have.

Then, we have the other side who say that, well, it is so highway dominated, that the Secretary does have the power to waive any of it, so you could go to zero. So it does sort of eliminate a category, but it may very well cause more confusion and disruption and fear out in the country than having at least an assurance of what one may have for the separate modes.

Secretary ADAMS. Well, Mr. Chairman, it is a new program. I would not think it would cause any consternation in the countryside. I think a great many people in the small urban and rural areas would be very happy to see that we are really paying some attention to them.

Mr. HOWARD. Well, it is new in that it is taken in the trust fund, but since the 1974 act, there has been for the rural areas, \$500 million.

Secretary ADAMS. Our problem with the present program, and the reason we changed it, is that it has not been used because they have not been able to gear up to it. We are trying to show them how they can. And there has never been operating assistance available to them before.

Mr. HOWARD. The categories reduction, which I know the administration was very concerned about—a great many of these categories are one shot, in a sense. We say “one shot,” even though it takes quite a bit of time. And it might mean the elimination of projects that are underway, like the Great River Road project which could possibly disappear; I would not want to have to be the one to tell Senator John Culver about it. Perhaps you would want to take that chance.

The overseas highway program also, involving the severe bridge problem in Florida, which the State has cooperated very much in, will be a program that is a finite program.

So, perhaps, in some of the areas of eliminating categories we might be able to do it as we do so much in the Government, handle it by attrition, where we do see a date when it will end, and that would then end the category.

On bridges, Mr. Secretary, we know that you are trying to work with the amount of money that we feel we can get with the present funding level sources, which is what you apparently have had to do.

We have not had great success in increasing the Highway Trust Fund or the gasoline tax, but that was a very emotional time in the Congress last summer, when there was a concern by many Members of Congress as to direct gasoline taxes used for public transportation and such things.

Many of us feel that we cannot therefore totally abandon the fact that we do need a great deal more money if we are going to have a modern, up-to-date transportation system in the country, both highways and public transportation. And it is going to cost money, and

we have a great investment which we must preserve and modernize, as you have stated.

And the bridge problem, the figures that we have received are the numbers that we have talked about, 105,000 unsafe bridges in the country, either structurally deficient or functionally obsolete, about 39,000 on the Federal-aid system, 60,000-some off the system, with a total need of today's dollars to either repair or replace the bridges of \$25.1 billion.

If we were to use the figures in the administration bill, which is \$450 million per year—you have it at 80/20; our proposal is 90/10—if the entire 90/10 were used, and the States each year used the total amount available, we would have our \$450 million, their \$45 million, and it would take, to bring up to standard the bridges that need it today, 50.7 years.

I wonder whether you agree that if additional funding is available, perhaps the bridge program might be an area where substantial increases could be made?

Secretary ADAMS. Mr. Chairman, I do not think we should try to make great increases beyond what we have suggested here in this bill. I think during the period of the 1980's, as we are shifting from other kinds of categories, we will undoubtedly be moving up with the bridge program. We are trying to do first things first, with the moneys that are available at the Federal and State level. I would suggest the committee not go to 90/10 with bridges, because a 90/10 amount of money reduces the total program level that will actually be in the field. If you use 80/20, you will have a larger total program, because the local share matched with the Federal share produces a higher program level. That is why we went to 80/20.

Now, the problem with the bridges is, as you well point out, with \$25 billion worth of work, the States are having a real problem deciding where they want to use their money on.

We have given the States an additional amount of money by raising the 70/30 up to 80/20, to kind of compensate for the fact their gasoline tax is not increasing as it has been.

With the flexibility we have provided, Mr. Chairman, we can shift funds to where they really need bridge work. We have some States that need it badly, and others that do not need it at all. And if we take too much of the total amount of money that we have available and put it into bridges, something else is going to suffer. So it was a matter of balancing.

Mr. HOWARD. Thank you. You know, that works both ways. We have had a fear, in trying to develop this first major new direction in transportation policy and funding and programs, since the invention of the automobile, of having such a strong Federal program and a large Federal program, that it might die on the vine because we just put it out of the reach of the States to begin to match. And so if we have an 80/20, we may find that some States just cannot participate in that to the degree that we would want them to, as they would with a 90/10.

So we do have a problem on both sides, of whether you can get more done with a higher ratio, or with a lower ratio because we know that the States are very, very concerned about the size of our program, with the present ratios that we have.

We are all agreed—we have been for over a year—in trying to standardize this and increase it to some degree.

And I note in your statement where you talk about the 80/20 that we have in many, many programs and the differences in what we have now or what might be in H.R. 8648, is the fact that you have even put more in the 80/20.

In safety construction, which has been 90/10, you bring down to 80/20; and there is a difference in the bridge program, where we have the match at 90/10, and you have it at 80/20.

So there may be more areas where you have 80/20, and we have 90/10.

Just one final point at this time, because I know the chairman and the other members would like to speak with you. One point you brought out, something that we have felt there was a greater agreement on, was that highways and mass transit are not rivals, should not be; there is no feeling that the best way to improve one mode is to hurt the other mode; they both have justifiable needs and ought to be considered as to what each needs.

But we do have some people who apparently do not understand this yet, and I would just like to have your comment on your legislation which comes from up here on the Hill, the Environmental Study Conference, to which many of us subscribe.

It talks about the fact that you recommend that interstate transfer, if it goes to where we have it now, goes to whatever mode you are going to take it to. At the present time, if you take the 90/10, or if you take the interstate transfer money, and it goes to a program that has been established by the Congress as an 80/20—so you are taking the 90/10 money and putting it into an 80/20 program—it becomes 80/20 money.

If the State's priority and its wishes are to take that interstate money and put it into a 70/30 program, it gets 70/30 funding.

Your recommendations would have all interstate transfers, no matter where it goes to, at 90/10, and you would also move, as we do, other primary and secondary highway money and such from 70/30 up to 80/20. We are in agreement, certainly, on that.

And one of the information sheets that I guess almost every Member received on this, talks about all other Federal highways would be funded, under your legislation, at 80/20, instead of the current 70/30 ratio. It says a major fight is expected over the proposed changes.

And then, in a flat-out statement, the next sentence says, "Environmentalists favor * * *." I am not aware that the environmentalists and the large and responsible groups of environmentalists in this short time have met and digested your legislation or ours, and then came out with a large policy decision.

It may be that someone in the employ of this group sat in an office, and decided what he or she would like, and that became, "Environmentalists favor * * *." I do not know.

But it says, "Environmentalists favor the 90/10 interstate transfer ratio, but want to keep other highway projects at 70/30, to give mass transit an advantage until it can 'catch up' with highways."

Now, I feel in a sense that this misses the whole point of what surface transportation and balanced transportation is, and that there is no factor of one catching up with the other.

I feel the needs for public transportation are probably greater in proportion to needs we have in highway transportation.

We have now 4 percent of the people in the country using public transportation. Seventy percent of that 4 percent are people who use buses and other highway-related public transportation. And the Highway Trust Fund, in preferential bus lanes and such, has been put into mass transit. So we have been keeping that in highways.

In your bill and in our bill, in the funding levels, approximately one-third of the total amount of money goes into mass or public transportation—at least one-third—to try to bring this 4 percent that we have up to what we would consider a maximum use of public transportation all over the country.

And I am glad that we are both working to try to get mass transit out of the category of the New York City subway alone. There are many areas in small towns, in rural areas, where they can use it.

So it would seem, if we are going to try and say, "Well, let us cut it on a proportionate basis for mass transit and highways," the most we could hope to get in the next 20 years in numbers and percentages of people, into public transit is probably 9 or 10 percent.

That is a very vital 5- to 6-percent improvement over what we have, based on what we have to do with energy and things like that.

But this is a large country, and there are many areas that just are not, as we know, in the future going to be dominated by public transportation.

Perhaps not in the area where I live or this east coast area, but we are going to have a great, great number of people who are still going to have to drive to work, or wherever, by automobile, because it is just not feasible to have public transportation in many of those areas.

I think that it would be much better if we try to consider the legitimate needs of the country and of the areas, rather than to try to put a dollar amount on it, because if we want to go totally with one person, one vote, throughout the country, we would be only putting 9 or 10 percent of the total transit money into public transit.

I think we need a lot more, but I do not think that we should consider patching up or competing with or holding down one mode because somehow or another it is going to help another mode.

We want mass transit and public transit to proceed as fast and to such an extent as it can. But I do not think that there is any way that we can, in the interest of the country, cut down one mode in order to cause the expansion of another mode.

And I just wonder, based on some of the kind of thinking of our percentages and amounts for highway and transit, whether you think this is the way we ought to go, or not?

Secretary ADAMS. Well, Mr. Chairman, I think we should go with the position that I have advocated to you, which is to build in public transportation alternatives for the American public to the very best degree we can.

We are going to have an energy shortage. We are going to have increases in energy costs, regardless of what bill is passed in the Congress. And therefore, we are taking the first steps—that is why I think today is so important—to put public transportation and highways together and to work on them together. As we go into the

eighties, our goal is to protect the American people in their lifestyle in the future, and we cannot do that if highways and transit are rivals.

The whole thrust of this Department is toward treating surface transportation as the movement of people and goods and not favoring one mode over the other, whether it be water, rail, air, highway, or public transportation.

We have an enormous job to do. We have a certain amount of resources, and we are trying to divide those resources in the best possible way. That is what we have come here to do.

Mr. HOWARD. Thank you very much. I agree. I am glad to hear you say that. And, of course, your performance since you have been Secretary, and that of your staff, has borne that out, and we are happy. It is just that I get disturbed that perhaps some misinformation might get out and influence many Members of the House.

I am happy to recognize now, and I am sorry for keeping him waiting, the chairman of the full committee, the gentleman from California, Mr. Johnson.

The CHAIRMAN. Thank you, Mr. Chairman. I do not want to take too much time away from the subcommittee members. I know they have questions. They are the ones that are going to be participating in the markup of the bill in the subcommittee.

I do want to take this opportunity to say to the Secretary that I think this is the best explanation of the transportation problem in the United States that I have heard in the 20 years that I have been on this committee.

You have detailed the various items and you went into it in great detail.

I think you have given us the benefit of your knowledge and the thinking of the administration. I am very happy to learn that there is a lot that can be agreed upon, both in the Howard bill, the committee and subcommittee's bill H.R. 8648, that was introduced during last year and on which lengthy hearings were held, and H.R. 10578 that was recently introduced as the administration's bill.

I know that in subcommittee, they are going to be working very closely with you and your experts to perfect a bill that will progress along and meet the deadlines and do the job.

Your explanation of planning I think is very good. We have some problems with that in some States. Local governments, both cities and counties, now have a great deal of expertise. And when we deal with one of these programs, they figure they are just as expert as the State is, and we have had trouble in trying to bring about coordination and thinking.

That is why we have so many gaps and so much of the uncompleted interstate and other types of highways today. It has been the difference between the State and Federal government.

I presume that you people heard a lot about this as you traveled throughout the United States.

Secretary ADAMS. We certainly did, Mr. Chairman.

The CHAIRMAN. And they are experts. I happen to represent, and have represented, 21 of California's 58 counties and about 50 cities,

and no matter what their size is, they have the expertise, and they think they each have problems.

So I hope we can get together in the planning aspects of this thing and reach a happy medium, so that all of our branches of local government and State government can be in harmony with the Federal intent here and get the planning behind us.

Secretary ADAMS. That is what we are trying to do, Mr. Chairman. If there is a fight between the local government and the State government, and they cannot reconcile it, and it involves a Federal-aid project, what happens is that the Federal Government vanishes at that point. That is one of the major log-jams, both in certain urban areas and in completing the Interstate, and we would like to see a unified planning process. We have a substantial amount of money available to help those areas.

The CHAIRMAN. You mentioned the \$50 billion over the 5-year period. Does that include all of the safety programs, too?

Secretary ADAMS. No. The State program is in addition to that.

The CHAIRMAN. What was the estimated cost of the safety program?

Secretary ADAMS. It would add, over the 5 years, more than another billion. We are talking about the highway traffic safety portion, in addition to the safety construction program.

The CHAIRMAN. Over an additional billion dollars?

Secretary ADAMS. Yes.

The CHAIRMAN. Well, in cutting back on the categories, I know that you are going to step on a few toes here and there, as you squeeze this down.

What was your estimate again on the number of categories you would wind up with?

Secretary ADAMS. Ten major categories. And I might say, so that the committee understands it, that I am aware of the Great River Road and the overseas highway program. And we have not deauthorized these categories. The unobligated balances are there for those programs.

We have tried to address each of those programs. But the question is going to arise, Mr. Chairman, as I really think it should with some specialized projects like that, whether the States that are involved and the areas that are involved want to shift their money over to use it in a different area or for a different purpose.

State and local governments are now becoming quite concerned about where their money goes. The one story that I hear from the chairman of the Transportation Committee of the Conference of Governors, which he repeats to the President, and he has the President's ear since he is the Governor of Georgia, is that he has quite a bit of money left in his highway center line painting category, but he had not got any money to build the bridges over the river, and he has not quite figured out yet how to paint the surface of that river with the paint.

That kind of problem argues for making those categories more flexible.

Mr. CLAUSEN. Is that the Chattahoochie River?

Secretary ADAMS. That is one.

The CHAIRMAN. I am sure there are other situations just as prevalent as that one in the various categories that we have dealt with over the years.

I notice in your funding recommendations, though, for fiscal 1979, you leave the amounts about the same.

Secretary ADAMS. That is correct, Mr. Chairman. We took the lid off on public transportation that had been placed by the prior administration. So there is not a moratorium any longer, as I indicated in my answers to Chairman Howard. With the others, we have indicated what the authorizations would be for a number of years.

But we need to change the structure and know what program structure we are going to have. Then, we will be back to this committee and to the other committees of the House and of the Senate and say, "All right, now, we can do this much with this amount of money." We do not want to leap off into a large new program until we know from these authorizing committees what the program structure is to be.

Second, last year, we put out more money than has been put out since 1916. We are just about hitting what the States and the others are able to come in to us with at this point. We do not want to have an authorization level out there that would simply not be used, because then we come under tremendous pressure for not using what we have.

We think that the structure change is vital first, and that the amount of money that we have in it will meet the demands that we can see in these next few years.

The CHAIRMAN. Thank you, Mr. Chairman. I will let you hear from your subcommittee members here.

Mr. HOWARD. Thank you, Mr. Chairman.

The gentleman from Pennsylvania, Mr. Shuster?

Mr. SHUSTER. Thank you, Mr. Chairman.

Mr. Secretary, I would like to ask just a couple of questions at this point, and submit additional questions to you to respond to in writing.

Secretary ADAMS. We would be happy to respond to those, Mr. Shuster.

Mr. HOWARD. Without objection, they will be made a part of the record.

(See page 182.)

Mr. SHUSTER. Thank you, Mr. Chairman.

Mr. Secretary, I am comforted not only by your testimony, but also by reports in the press that you and the Transportation Department actually asked for substantially more funding than the administration saw fit to provide in the administration bill.

It would appear to me that you and the Transportation Department perhaps recognize the seriousness of the under-funding of America's transportation system—more so than the administration does.

I personally view the underfunding of our transportation system as the most critical transportation issue facing America over the next 10 to 20 years, and I applaud you to the extent that you recognize

that, and I applaud you for your comments that we do need a mass transit trust fund. I applaud you—I think, if I heard you correctly—for your comment that you still support some form of gasoline tax—but do not let me put words in your mouth—

Secretary ADAMS. I have supported that, and I have sent a letter, as all of you know, to every member of the House when that was up, and I called an enormous number of them at that time. So once said, once done.

Mr. SHUSTER. Well, some of us who do support an increase in the gasoline tax—and I am one of them, so long as the people who pay the tax get the benefit from it—had difficulty with the suddenness, as well as the allocation, of the proposed tax last summer. But I am hopeful that indeed we can build strong bipartisan support for an increased gasoline tax, because I think we need it.

Let me ask you two specific questions, which deal with my deep concern about what I believe to be the serious under-funding.

First, the American Public Transit Association has recommended an annual public transportation funding level ranging from about \$3.5 billion in 1979 to \$4.4 billion in 1983.

Senate bill 208, as introduced by Senator Williams, has an average annual funding level of \$4.5 billion. And H.R. 8648, introduced by Chairman Howard, myself and other members of this subcommittee, contains an average funding level of \$4.2 billion.

These bills, it would appear, more realistically address public transportation needs, particularly in light of the average annual capital operation and maintenance needs identified in the 1974 National Transportation Report of over \$12 billion.

Now, do you feel the funding level for public transportation in your bill adequately addresses public transportation needs in our Nation?

Secretary ADAMS. We think that it does address those needs adequately, if you do not consider the urban strategy renewal component. Now, as you know, still under consideration within the administration, is the amount that would be allocated to transportation systems for revitalization within the center city areas and the areas that need to be part of an urban strategy—

Mr. SHUSTER. You are saying there might be more money to go to mass transit maybe from HUD or HEW or someplace else?

Secretary ADAMS. It would come in through Transportation. We have all worked together. But the total package for the cities has not been completed. Our information is into it. They are arguing about other parts of the program. But with that, we are very close to the average that is in 8648.

Mr. SHUSTER. Indeed, that could presumably recognize urban mass transit for what some argue it should be, a social service?

Secretary ADAMS. That is what it is.

Mr. SHUSTER. Yes. Then that, therefore, might be a place to get the money for an urban mass transit trust fund?

Secretary ADAMS. It is a potential. As the chairman mentioned, there are a number of sources. I can support some; I cannot support others. But I have always felt you need a construction schedule planning system, and we have gone as far as we can in trying to get that.

Mr. SHUSTER. That is very interesting, and I will certainly be looking forward to hearing about that.

Mr. EDGAR. Would the gentleman yield?

Mr. SHUSTER. Certainly.

Mr. EDGAR. I wonder if the Secretary could explain why the first and second drafts of the urban policy did not mention the word "transportation."

Secretary ADAMS. The drafts that went out were from the sub-policy group. We have had our input into it, and the final draft has not been submitted back to me. But I would not say that the first two drafts were going to be the policy statement. They have not been accepted as such.

Mr. EDGAR. Thank you.

Mr. SHUSTER. My second question, Mr. Secretary—by way of preface, I would like to point out that I would like to dispel the myth that no one reads Environmental Impact Statements. On page 16 of your bill, you indicate that the real size of the highway program in constant dollars would decrease substantially over the life of your bill.

How can you justify this in terms of need, in light of the fact that we are already falling behind, as was indicated in DOT's 1977 Highway Status Report?

Secretary ADAMS. What is involved there is taking into account the past inflation that we have suffered, which we have just about overcome now.

Mr. SHUSTER. Are you saying that we do not anticipate continued inflation? And will not that have a similar impact?

Secretary ADAMS. In constant dollars, if there is an inflation rate, the program could decrease. But we cannot predict that inflation rate at this point. There is not a built-in escalator in the program, if that is what you are asking.

Mr. SHUSTER. But must not a reasonable man or a reasonable woman project that there will be inflation, and therefore, it is unrealistic to say that constant dollars—

Secretary ADAMS. There is no question about the fact that over the past number of years, inflation has cut into the number of real dollars that we are able to put out. That is one of the primary reasons this bill changes the whole structure of our programs, in order to make the dollars a lot more productive. If we just keep doing the same thing we are doing, we will not catch up.

Mr. SHUSTER. Does it not therefore follow that the highway program in constant dollars will decrease substantially over the life of your bill, assuming an inflation rate of 5 to 7 percent?

Secretary ADAMS. If there is a high inflation rate, Mr. Shuster, there is no question that any government program suffers.

Mr. SHUSTER. I agree. Therefore, should we not have more dollars in your bill, in order to adequately address the real surface transportation needs of America?

Secretary ADAMS. We have put extra money in anticipating inflation, but we cannot tell you the exact amount that we will need in a particular year because the projects come on line depending upon the EIS process, whether or not there is litigation with it, administrative lags, and how quickly the State can come up with their money.

Mr. SHUSTER. Thank you, Mr. Secretary and Mr. Chairman. In closing I would just like to again emphasize my strong view that inadequate—

Secretary ADAMS. One problem, Mr. Shuster, is that if we just authorize more money, unless we get the structure fixed, it does not mean that more construction is actually taking place out there.

That is what I meant in my earlier comments, that we have to know the structure, we have to try and get this more flexible, get the dollars more productive. Simply adding additional authorizations, if we cannot move it out into the field, may be taking account of inflation, but nothing real is happening. That is why we want the structure first.

Mr. SHUSTER. No question, Mr. Secretary. I agree with you completely, that we must constantly be improving structure, because without sound structure, more dollars will not do the job.

And the other side of that coin is that the best structure in the world will not do the job if we do not have adequate dollars to go with it.

And it is my view that the—underlining the word “the”—excruciating transportation issue facing America is the lack of adequate funds.

I have confidence in you and the transportation leaders of this committee and of the Congress, to improve the structure. I think we have collectively enough know-how to stumble in the right direction in terms of structure.

But I think we also have to provide the adequate dollars.

Mr. HOWARD. Thank you, Mr. Shuster.

Mr. Secretary, we would like to congratulate you because, as you know, having been a Member of Congress, how difficult it is sometimes to get the Members of the subcommittee to hearings. There are some Members here who are Members of the Full Committee and are not Members of the Subcommittee on Surface Transportation, who have asked to come here to listen to you and they may have some questions. So what we will do is proceed with Members of the subcommittee and then recognize other Members following that.

The gentleman from California, Mr. Anderson.

Mr. ANDERSON. Thank you Mr. Chairman. Mr. Secretary, it is my understanding that the President has directed EPA and the Department of Transportation to coordinate their efforts in implementing the transportation control plans mandated in the Clean Air Act.

Now, the Clean Air Act requires certain dates and certain deadlines, and says that Federal moneys can be used. Now, can you tell me if your program will provide any new or additional assistance to those specific areas, such as my own Los Angeles area, where we are expected to face substantial transit and transportation control expenditures as a result of the programs mandated by the Federal Clean Air Act?

Secretary ADAMS. We have put in extra planning money. I have visited the Los Angeles area three different times to discuss the programs that they want. When they requested, for example, that we fund, a people-mover in the area, we indicated we would do that if they wished. There seems to be some divisions within the Los Angeles area as to just what they want to do to meet the Clean Air standards,

but we have put in more money for their planning operation, and we are prepared to move forward in the area as they tell us what they believe is the best solution for meeting their air quality problem.

I cannot, as Secretary of Transportation in fact the Federal Government cannot, go into the Los Angeles area, other than by taking Draconian measures which EPA has tried from time to time in various cities, and say, "You will have no cars in the area, or you shall only be able to do this." We cannot go in and impose a solution from the Transportation Department. We are certainly trying every way we can to come up with money for their proposals, whether it is another El Monte type busway operation—as you know, we tried the diamond lanes down there and that is still pending. We have offered the people-mover; we have indicated support if they wish to go to the lower bus fares. But we have to rely to a great degree on the local initiatives out of Los Angeles.

Mr. ANDERSON. I think, perhaps, the problem is, as the President mentioned, we have to get our act together. In other words, you are limited with your funds, but the EPA, which is also part of the administration, has now put out the edict of certain dates, certain deadlines that must be met; certain levels must be met and says that Federal moneys must or can be used. So, local governments are getting directives from the Federal Government to do certain things.

Now, let me ask a different question. On the face of it, the proposed allocations of commuter and rail modernization funds by formula does not make allowance for transportation control related expenditures. This is a new item now that has been mandated in the Clean Air Act. Do you anticipate that new starts and/or extensions which are designed to permit an area to reach its ambient air quality standards would be given priority in the distribution of remaining discretionary funds?

Secretary ADAMS. Yes. We are required by statute, Mr. Anderson, to give preference with our discretionary funds to areas that are under air quality edicts.

Mr. ANDERSON. What long-term commitments would you expect to be available to an area undertaking new starts which are clearly beyond the resources which they can anticipate receiving through the allocation formula? And I think this goes back to your previous comments. We know that we do not have the resources to meet the date deadlines of the EPA, and anything we do is just way short of it.

Now, what long-term commitment possibly can we have that the two Federal agencies are working together? I understand you have met with the EPA people and you are now trying to coordinate this edict on the one side and the money you have on the other.

Secretary ADAMS. That is precisely what we are doing, Mr. Anderson. What I continue to indicate to the EPA people involved is that they have their job to do and they set forth their requirements, but if we physically cannot meet that in a particular area, we put the resources we have, as do the local governments. And there are a certain amount of resources. It is a spur that goes on all the time and we need it. But there is nothing that I know of—and I have been over that city by helicopter, and in that city by automobile. I do not know of any formula, magic, or other thing that can convert that

city into something different right at this point. I have said this to the local officials and to the EPA people. We stand ready to help, but I do not know of an invention to do it.

Mr. ANDERSON. Now, the policy of your bill is to increase the amount of formula money, which will cut down the discretionary money. Will these discretionary funds, which you say will have a priority to be used for those programs decreed by the EPA, also be available for major capital expenditures such as bus replacement, for example?

Secretary ADAMS. Yes, they are for major bus programs.

Mr. ANDERSON. OK. Now, you—

Secretary ADAMS. That is the difference from the formula system. Where we have a replacement in an on-going program, that is within the formula operation. Where you go with a major new program—for instance, a rail start or a whole new bus system approach—that is discretionary money. But, Los Angeles, which you are referring to specifically, may or may not come up with a particular discretionary program. They have come in with differing programs at differing times as to what their solution might be, and we have tried each time to cooperate with them.

Mr. ANDERSON. Now, in your legislation, you have these deadlines, for example, on the interstate. Will local areas receive extensions to the interstate decision deadline if the project is under litigation; despite the fact that both the State and local governments and the Federal Government have all agreed on the interstate program, but they are tied up with a suit.

Secretary ADAMS. We do not expect waivers. Our deadline is for an approved EIS. Now, generally, any litigation takes place after the EIS is approved; litigation is the result of the decision on the EIS; the EIS decision is appealed. Completion of the EIS and its approval by the Government indicates that there is commitment to that section; that is the trigger that we say has to be in place by that date. And if litigation occurs after that, then they are not in jeopardy.

Mr. ANDERSON. In other words, if the project has a complete environment review process by Oct., 1982, and if there are suits after that, it is still part of the program.

Secretary ADAMS. That is correct.

Mr. ANDERSON. Now, you stressed the term "flexibility" quite a bit, versus limited resources.

While local officials with whom I have talked welcome this new flexibility which your legislative program offers, they are concerned that without a more substantial increase in the overall funding levels in the highway and the transit programs, that the new flexibility will mean very little.

What do you feel that this new flexibility will actually mean to local officials, even at the funding levels which you have suggested, and what increase might you be proposing in the future?

Secretary ADAMS. The limits that face the State and local governments now are not with the funding levels that the U.S. Government has authorized, but the inability to come up with their matching amounts. Flexibility, and going up to 80-20 in a lot of those programs, will release additional State money and let them use a greater

percentage of what is authorized. In other words, when we say that primaries will be at 80-20 rather than 70-30, they have to put up less money. We carefully balanced our proposal to try and give the States additional money, because they were not using all that was available.

As this system rolls forward, Mr. Anderson, if we see that we are not meeting the funding levels, then this committee will meet again, and we will all be together again to say, all right, we should change those funding levels. But the levels we propose match what we believe realistically will happen, as we see it from the applications that are coming in, I do not mean everybody's wish list, but I mean the hard, real things that are being applied for and that we believe will go into effect.

We have projected it out, but all projections are subject to the next Congress coming in and saying, "Well, let us see your project list." We will break down for you, if you wish, what each State is getting under this.

Mr. ANDERSON. Let us project this flexibility a little this way: Will States be permitted the option to utilize their bridge replacement funds for other necessary priority projects, such as railroad crossing eliminations or rights-of-way projects?

Secretary ADAMS. No.

Mr. ANDERSON. In other words, there is no flexibility there?

Secretary ADAMS. No. When we get down to the major categories, we did not drop below that. If we did otherwise—and, someday, the committee may want to consider this—we would just go to the States and say, "Here is the money, and you do it." We did not feel that was proper. We felt that we should retain certain categories.

We have gone down from over 40 to 10, and we felt that was the proper number to have at this point. With bridges, we swapped the transfer provision for the rehabilitation provision. We felt it was most important to have a rehabilitation provision in the bridge program.

Mr. ANDERSON. My last question, Mr. Secretary: Do you foresee the use of transit funds for bus-only and carpool-only lanes adjacent to freeways?

Secretary ADAMS. Excuse me.

Mr. ANDERSON. The use of transit funds for bus-only and carpool-only lanes adjacent to freeways.

Secretary ADAMS. Yes. That can be done under section 3.

Mr. ANDERSON. Thank you, Mr. Chairman.

Mr. HOWARD. The gentleman from New Hampshire, Mr. Cleveland.

Mr. CLEVELAND. Thank you, Mr. Chairman. I compliment you, Mr. Adams, on an interesting and thoughtful presentation.

I read with interest, as I am sure you did, the recent article in Forbes magazine, and I quote in part from that article:

Transportation Secretary Brock Adams has President Carter's go-ahead to propose sweeping changes in the way federal money is dispensed. The changes spell the ultimate end of the old Highway Trust Fund and much of what it stood for.

And the article concludes with the comment that you are

"going with a trend and not against one, and the trend is very clear: A single-purpose Highway Trust Fund is as dead as the era that spawned it.

There is a good picture of you with the article, by the way—so I can only assume that the reporter brought a photographer along with him or her, and that there must be some reasonable foundation in fact for these statements.

Secretary ADAMS. Not necessarily, Mr. Cleveland.

Mr. CLEVELAND. I think I would request respectfully that you be just a little bit more specific.

Secretary ADAMS. I stand with the position that is in the bill, which is that there will be a continuation of the Trust Fund mechanism. I have said previously that I would like to see the same kind of operation for public transportation. I think the reporter confused the combined account system, which we now have in the budget for presentation to all of you of where transportation moneys are spent, with a Trust Fund comment.

I think we take these things in steps, and if I am going to come up here and propose that we do something such as that reporter suggests, I will certainly let you know long before I do that.

Mr. CLEVELAND. Well, the reporter characterized you as being a very astute politician, and he spoke about—

Secretary ADAMS. Well, maybe he is accurate there.

Mr. CLEVELAND. The reporter did not say that you were going to try to do this overnight. He said that you were going to do it, though, and said, for example, that your proposals "widen the crack" that we put in the Highway Trust Fund some years ago.

But, seriously, this appears to be a fairly straightforward, factual report. For example, have you or your staff prepared a letter to the editor rebutting it?

Secretary ADAMS. Mr. Cleveland, I never send letters to the editor on comments that are made in the press; I just do not feel that is a very productive way of approaching it.

Mr. CLEVELAND. Well, if I sent a letter to the editor saying that this was an inaccurate article, would you deny that letter of mine?

Secretary ADAMS. No. What the reporter and others are asking—and I think you are too—is where does the transportation policy go in the next 10, 15 years. You, I, all the rest of us will undoubtedly see others coming in with proposed changes. I believe that legislation moves in incremental pieces, that what we are doing here today is addressing the fact that surface transportation has to be planned for and put together in a package. We are not proposing changing the Trust Fund, because the Trust Fund is going to be used. The day that the Trust Fund could be looked upon as a huge pot of money out of which everything could be funded is over. In terms of its total portion of the Federal budget, it is now very small, and we do not see how it is going to meet the needs of maintaining the existing system that is there. That is why I do not have any plans for doing away with the Trust Fund.

Mr. CLEVELAND. Well, Mr. Secretary, you have put your finger precisely on the point that I am trying to make, and it echoes the concerns that Mr. Shuster already expressed. This Trust Fund is not this massive, swollen fund that the opponents of the so-called highway lobby like to call it. In your earlier comments, you discussed the difficulty facing any proposal to increase the gasoline tax which might be committed to the Trust Fund. And what I am trying to point out is

that when an article like this comes out and says that the Highway Trust Fund is dead as O'Leary's cat, then it is a little bit difficult to ask the troops in the trenches to vote for a tax increase for the Highway Trust Fund if all that does is to make the inviting target that much bigger for the type of people that write this type of article and put the black hats on the boys who are trying to take care of the highway transportation needs of the country.

This is one of the reasons why you are not going to get any increase in the gas tax, unless there is some fairly firm understanding that if it is going to be called a user tax, it will be used for the purposes that it is supposed to be used for.

Secretary ADAMS. I agree with that. And what we have proposed is on the chart; you will notice how we have taken different funding, different recipients, different planning, different constituencies, and proposed equalized funding, single recipient, joint planning, and better support from the combined constituencies. That is what we are proposing; that is what we stand for, and that is what we are here urging that the committee approve.

Mr. CLEVELAND. Mr. Chairman, I understand that we will have an opportunity to submit questions in writing that we do not have time to pose?

Mr. HOWARD. Without objection, any Member can submit questions to the Secretary. The questions and responses, when received, will be made a part of the record. [See page 182.]

Mr. CLEVELAND. I have one or two other questions which I will submit to you in writing, Mr. Secretary. However, I would like to just make two points. One, although I have not fully digested your remarks and your legislation, I am sorry that in your remarks you did not stress more than you did an attitude of cooperating with the State governments, be they transportation departments or highway departments. I was sorry, because I think that must be your philosophy.

And the other comment I have is that I do think that you and your associates may be placing a little bit too much faith in the planning process. I know we need planning; everyone agrees we need planning, but out there in the real world, I have seen planning cause as much damage as it has improvement. So, I am always a little bit cautious when I read a proposal that is heavily dependent on a planning base, because although planning is important and it is necessary, planning is something I have seen, in many cases, cause more delay than progress.

Secretary ADAMS. What we tried to do, Mr. Cleveland, is to get the planning into one package, because our biggest problem is receiving differing plans from differing groups, when the total State-local act is not together. That is what we are trying to avoid by this bill; we are trying to get to a unified planning program.

Mr. CLEVELAND. Thank you, Mr. Chairman.

Mr. HOWARD. Thank you. Before we recognize the gentleman from California, Mr. Secretary, just for the record, is it not accurate that as of a few days ago, there was in the Highway Trust Fund something in the area of \$10 billion and, also, as of a week ago, there had

been authorized and apportioned an amount somewhat over \$23 billion?

Secretary ADAMS. Yes, that is basically accurate.

Mr. HOWARD. Thank you. The gentleman from California, Mr. Mineta.

Mr. MINETA. Thank you, Mr. Chairman. Mr. Secretary, it is great to have you here, and we appreciate the continued leadership that you have shown as Secretary of Transportation.

I hope that we will have the support and the resources of the Department in coming to a conclusion on a final bill for our subcommittee.

Secretary ADAMS. Mr. Mineta, the full resources of the Department are available to the committee. We hope we will be included in your efforts as you draft and mark up a bill. We are prepared to have all of our people here to consult with members of the committee. Our staff has spent 3 days with the committee's staff going through each bill, so if there is any section on either bill on which you want to know our position, we will tell you.

Mr. MINETA. That is great, Mr. Secretary; we appreciate it very much.

The formula for apportionment is based on 50 percent cost to complete the essential gap and 50 percent cost to complete the entire system.

Could you explain how the Department of Transportation arrived at the definition of "essential gaps."

Secretary ADAMS. We reported to the Congress in 1976 on what the essential gaps in the system were.

That report is entitled: "Interstate Gap Study;" it is Committee Print 95-18, 95th Congress, First Session.

Mr. MINETA. As I understand it, you can reallocate interstate funds that are not obligated within the 2-year period to other States. Will this affect the obligational ceiling of the highway program?

Secretary ADAMS. Each year, we will look at what the level will be and cover it in the appropriations process. It does provide some upward pressure, but each year, as you know, an obligational ceiling is placed on the program, and the Congress will be looking at that. That will control the total amount.

Mr. MINETA. Now, as far as these gaps are concerned, your proposal takes care of the intercity gaps. What about the urban gaps?

Secretary ADAMS. They are financed out of the remaining 50 percent, if they are not essential gaps. If they are essential gaps, they are within the 50 percent.

Mr. MINETA. Won't that increase the pressure in terms of the ceiling, that the Congress imposes?

Secretary ADAMS. No. We have already got an estimate of what the States plan to obligate in this area during the period of this bill.

Mr. MINETA. I would also like to ask very quickly about the budget requests from the Department of Transportation. There seems to be some confusion about the budget requests from DOT since OMB had refused to, I guess you might say, honor the DOT budget requests. I am wondering if you could put into the hearing record what those figures are.

Secretary ADAMS. We can provide those for the record. Everybody was cut; I think we did better than most.

[The following was received for the record:]

The attached tables compare FHWA and UMTA budget requests to DOT, DOT's budget request to OMB and the President's budget, both under current law and the Administration's legislative proposal.

URBAN MASS TRANSPORTATION ADMINISTRATION FISCAL YEAR 1979 BUDGET EVOLUTION

[Obligations in millions]

	Fiscal year 1978	UMTA request	DOT request	Fiscal year 1979 budget	Proposed legislation
Sec. 3	¹ \$1,375	¹ \$1,660	¹ \$1,875	¹ \$1,375	\$627
New starts/extensions	610	700	525	525	527
Major bus	54	40	40	40	40
DPM	75	90	75	75	50
Rail modernization	320	405	360	360	
Bus	316	425	425	375	
Emergency					10
Urban initiative			450		
Sec. 5	775	850	850	850	1,700
Sec. 5/sec. 17/18					905
Capital (bus/rail modernization)					770
Demos					25
Planning	55	70	60	55	² 48
Interstate transfer (transit only)	³ 370	³ 476	³ 400	³ 400	³ 400
R.D. & D.	70	110	76	71	
Administration	20	30	24	21	⁴ 90
Total	2,665	3,196	3,285	2,772	2,865

¹ Excludes \$25,000,000 for rural program to permit comparability with legislative program.

² Represents a 2 percent take down from secs. 3 and 5.

³ Excludes funds for Metro for comparability with fiscal year 1979 budget.

⁴ Includes administration and R.D. & D. expenses.

FEDERAL HIGHWAY ADMINISTRATION FISCAL YEAR 1979 BUDGET EVOLUTION

[Obligations in millions]

Appropriation	FHWA request	DOT request	President's budget	Proposed legislation
3103 Motor carrier safety	15.3	15.0	13.4	13.4
3209 Highway beautification	23.2	23.2	¹ 23.2	(¹)
3300 Darien Gap Highway	46.4	18.9	20.0	20.0
3400 Territorial highways	5.6	5.6	¹ 5.6	(¹)
3510 Rail-railroad highway crossings	2.9		11.4	11.4
3520 Rail crossing demolition project (NEC)	58.0	2.7	(²)	(²)
3600 Off-system railway-highway crossings	65.0	65.0	30.0	30.0
3700 Great River Road	50.0	50.0	50.0	50.0
3800 Alaska Highway	38.8	38.8		
3900 Off-system roads				
4000 Highways crossing Federal project	20.9	16.0	16.0	16.0
4100 Federal-aid highways	7,578.8	³ 7,578.8	³ 7,578.8	7,800.0
4209 Limitation on general operating expenses	(178.1)	(173.6)	(173.6)	(173.6)
4300 H.R.S.G. (402)	40.0	28.0	¹ 28.0	(¹)
4400 Baltimore-Washington Parkway	2.0		2.1	2.1
4500 Project acceleration demonstrators	10.0			
4600 Highway safety R. & D. (403)	10.0	10.0	9.0	9.0
4700 Overseas highway	25.0	25.0	17.0	17.0
4800 Right-of-way revolving fund				
4900 Safer off-systems roads	165.0	165.0	70.0	70.0
9100 Traffic control signal demonstrations				
9200 Intermodal urban demonstrations				
9300 Highland scenic study				
9400 Access to lakes	8.1		10.4	10.4
Miscellaneous items	7.2	7.2	14.9	14.9
Total obligations	8,171.3	8,049.2	7,899.8	8,064.2
Total B.A.	7,691.7	7,545.2	3,744.0	7,890.3
Total outlays	7,591.0	7,325.0	7,564.6	7,564.6

¹ Included in the Federal-aid highways account.

² Included in \$455,000,000 NEC budget request in Federal Railroad Administration budget.

³ \$7,545+-\$33.8 emergency relief carryover balance (estimate).

URBAN MASS TRANSPORTATION ADMINISTRATION FISCAL YEAR 1979 BUDGET EVOLUTION

[Obligations in millions]

	Fiscal year 1978	UMTA request	DOT request	Fiscal year 1979 budget	Proposed legislation
Sec. 3	\$1,375	\$1,660	\$1,875	\$1,375	\$627
New starts/extensions	610	700	525	525	527
Major bus	54	40	40	40	40
DPM	75	90	75	75	50
Rail modernization	320	405	360	360	
Bus	316	425	425	375	
Emergency				(?)	10
Urban initiative	775	850	850	850	1700
Sec. 5					905
Sec. 5/sec. 17/18					770
Capital (bus/rail modernization)					25
Demos	55	70	60	55	\$ 48
Planning	\$370	\$476	\$400	\$400	\$400
Interstate transfers (transit only)	70	110	76	71	
R.D. & D.	20	30	24	21	\$ 90
Administration					
Total	2,665	3,196	3,285	2,772	2,865

¹ Excludes \$25,000,000 for rural program to permit comparability with legislative program.

² Administration decision deferred pending comprehensive urban policy review.

³ Represents a 2 pct take down from secs. 3 and 5.

⁴ Excludes funds for Metro for comparability with fiscal year 1979 budget.

⁵ Includes administration and R.D. & D. expenses.

Mr. HOWARD. Will the gentleman yield?

Mr. MINETA. Yes, Mr. Chairman.

Mr. HOWARD. Without objection, all requests of the Secretary and the Department for information to be placed in the record will be made a part of the record.

Mr. MINETA. I do support the consolidation of programs and flexibility of local decisionmaking that you have proposed; for example up to 50 percent of the urban highway funds may be transferred to either primary or small urban and rural roads. Could you explain the mechanism for that transfer and whether these transfers to small urban and rural includes operating expenses as an eligible item.

Secretary ADAMS. Transferred funds could be used for any eligible project in the category to which they are transferred, and operating assistance is an eligible project in the small urban and rural program. However, the Trust Fund would be reimbursed from the general fund for any operating assistance project costs.

Mr. MINETA. What about on road and bridge maintenance responsibilities? It seems to me that back in 1956 or so, under the law, the responsibility for maintenance was left to the States, but now there seems to be a transfer of that responsibility to the Federal Government. I am wondering what with scarce resource dollars and the vast Federal financial requirements of this kind of a program, how are we to insure that States and locals fulfill their responsibilities.

Secretary ADAMS. Mr. Mineta, since 1916, the repair and maintenance of highways has been the responsibility of the State and local governments. What we have begun to do over the last 2 or 3 years—is to redefine construction to allow a greater degree of resurfacing, restoration, and rehabilitation. A major problem that this committee and the administration will face all during the 1980's is the mix between keeping what we have and completing more. I can-

not think of a single State I have talked to that has not said that they do not know how they can maintain the Interstate System. I do not ever look backward as to what was thought in the past, or blame, but I hear them say that they cannot do it, and we just cannot let it disappear.

Mr. MINETA. Your proposed legislation, would for the first time, provide assistance to off-system bridges, wouldn't it?

Secretary ADAMS. A portion of the funds can be used for off-system bridges, a limited portion.

Mr. MINETA. But once the nose is under the tent won't that grow to 100 percent in terms of maintenance costs?

Secretary ADAMS. I do not believe so. The States do not have the money for that. We are trying to meet a really difficult transportation problem in many States where the whole system may shut down because of broken links in its off-system network.

Incidentally, as for routine maintenance I want to stress that the States maintain the system. We are not talking about cutting the grass and that kind of thing. We are talking about the integrity of the basic system itself. Having built the system, if we walk away from it and the State cannot maintain it, our Interstate System will have broken impossible links.

Mr. MINETA. I understand under the bridge program that bridges that are over other highways are not eligible for assistance. And I am wondering whether or not your Department, Mr. Secretary, would support a change in this restriction?

Secretary ADAMS. You are correct. The definition of a bridge does not include going over another highway. It is a definitional matter; we think the definition that we have in is the correct one.

Mr. MINETA. Do you think there is any possibility of a change in that definition to include bridges over highways?

Secretary ADAMS. We do not think it should be changed, because as the Chairman pointed out, the numbers that we are dealing with here and the problems that we are dealing with are just astronomical. We should go as far as we can with the dollars that we have, under the definition that we have.

Mr. MINETA. I am thinking of an example in California where we have a bridge that, based on its condition, could be eligible for assistance, but because it goes over another highway it cannot get assistance.

Secretary ADAMS. You can fund it out of the primary or other highway category.

Mr. HOWARD. If the gentleman would yield, the chairman would be very happy to listen to whatever ideas the gentleman from California has.

Mr. MINETA. The final question I would like to ask is relative to the commuter rail assistance. We, of course, under section 18, have taken a position relative to commuter rail. We established a new section 18 to assist the commuter rail outside the Conrail system, and the administration bill would lump sections 17 and 18 into the section 5 formula program, as I understand it.

And I am wondering whether or not this lumping will still provide the necessary amount of dollars that we need for implementing

section 18, or would the formula disadvantage areas with heavy commuter rail use.

Secretary ADAMS. There is more available under the bill for section 17 and 18 purposes than there was in the past. Both of those were temporary programs that had been extended. We felt that they should be folded into the formula program so that cities, local governments and transportation authorities can decide whether they want to put their fund money into commuter rail, into buses, or into their subway system.

Around the country, Mr. Mineta, we are finding that the construction of great new systems is terribly expensive. And, therefore, while giving local officials flexibility in use of their funds, we are saying to them, "Try to use your existing facilities better." They have the flexibility under our proposal to do that; that is why we rolled the categories together.

Mr. MINETA. And how much is there in that total program? Is it not \$2 million for California?

Secretary ADAMS. For fiscal year 1979, it is \$80 million.

Mr. MINETA. How much?

Secretary ADAMS. 80.

Mr. MINETA. 80. Mr. Secretary, thank you very much. I appreciate, again, your being here, and would appreciate very much your staff being available to work with our staff here in developing a bill.

Secretary ADAMS. Mr. Mineta, our staff is available to you; if you call Mr. Bracy, or whoever he has assigned we will send people to your office immediately.

Mr. MINETA. Thank you very much, Mr. Secretary. Thank you, Mr. Chairman.

Mr. HOWARD. Thank you. The Chair would like to announce that, perhaps, all of us may lose a little weight today, because we are not going to take a break for lunch and ask the Secretary to return after lunch. However, at the present time, the subcommittee will take a 10-minute recess, and we will resume our hearing at 12:15.

[Whereupon, a brief recess was taken.]

Mr. HOWARD. The Subcommittee on Surface Transportation will please come to order. Thank you for your patience. I hope our guests will be more comfortable.

The Chair now recognizes the gentleman from California, Mr. Clausen.

Mr. CLAUSEN. I know you have been waiting for this. Brock, it is always a delight to have you up before the committee, and as you know, the members individually and collectively feel an affinity, a special affinity to you as an individual, and it is just so gratifying to be able to sit there and talk across the table from someone that has been here, and everything that you have been presenting here this morning tends to reflect that. So, I just want to let you know it is just great to have you again before the committee.

Now, I do not want this to come off as being facetious, but I would like to have a little bit of understanding. You know, the President, when he appointed the Cabinet officers, indicated that he was going to place heavy emphasis on delegating the responsibility for the running of those departments to those Cabinet officers. Can you

speak for yourself and the Department, or how much do you have to take direction from the White House?

Secretary ADAMS. We have a very good relationship. I speak for transportation matters. Where we get into a problem is with the same and continuing problem that always exists in any government when you arrive at the budget. The President has an overall budget and then divides it. But I have no problems. In fact, I cannot remember on any decision where I have said, "I think that this is what we ought to do," and he said, "No, don't do it." I have been very, very satisfied with the relationship.

Mr. CLAUSEN. Well, we are glad to hear that.

Secretary ADAMS. We fight a little internally in the Administration on various things, among departments, but there is no problem in the line authority.

Mr. CLAUSEN. Well, you know the importance of this, because as you have indicated, we are trying to develop a working relationship between you and your experts and we and our experts. And on many occasions—this is not unique to this administration; this is one of the problems we always face—that, oftentimes, there is some hidden individual sitting down at the White House that has a point of view, and says, "I speak for the President"; and he calls down, and then all of a sudden something changes.

So, we just want to know whether or not we are going to be able to communicate directly with you, and if I have that assurance, that answers my question.

Secretary ADAMS. You do, Mr. Clausen.

Mr. CLAUSEN. Now, another point, and I think that the chairman, Mr. Johnson from California, alluded to this, and I wanted to re-emphasize it, and I suggest that you and all of us take heed of what the Chairman made reference to, and that is the fact that there is a body of expertise and a capability out there in the communities and the counties. Now, we recognize—and I believe, in California, we may be ahead of some of the States because of the fact that we have had, over the years, an earlier commitment to transportation in all aspects and, yet, we have some serious problems. So, this State and county coordinating role, in my judgment, will only be successful if we have that body of expertise working in unison, so that it comes from the grassroots up, so that it will be accepted at that level, rather than something that is direct from the top down.

Now, we can do certain things to direct that, but all I want to say is that we need to take heed of that, and I will discuss it with you more, because having been a locally elected official, as my friend Norman Mineta and many of these people here, you cannot move on anything in a given area unless you have the local body politic co-operating with you. And that is the reason why I place a lot of emphasis on that, because I served there.

Now, I note that you are recommending one-third operating assistance.

Secretary ADAMS. A maximum of one-third of the operating costs.

Mr. CLAUSEN. One-third of cost—

Secretary ADAMS. That is maximum.

Mr. CLAUSEN. OK. Now, how will that differ from the current 50 percent matching formula that was adopted?

Secretary ADAMS. What we presently have is a 50-50, Federal-local match but in most areas we provide far less than 50 percent of the operating costs, because the total dollar amount that we have available for an area does not cover all of the demands that are made on it. We felt that the one-third ceiling was more realistic. In fact, I am not certain, Mr. Clausen, that the total losses that are going around the country, that we could even cover one-third.

Mr. CLAUSEN. Well, that is interesting, because I think that you were here when we had that great debate—

Secretary ADAMS. I remember.

Mr. CLAUSEN [continuing]. on the Floor when we passed the Mass Transportation Act back in 1974, and you will recall that I was the one that offered the amendment on the Floor that, I think, carried the House, and it was pegged at one-third at that time.

Second, to back up that point, it was the Secretary of Transportation—I do not recall his name, but he was in Governor Sargent's of Massachusetts administration; he was the Secretary of Transportation. He came before the committee and offered substantial justification as to why the operating assistance should not, under no circumstances, go beyond the one-third. And I thought that that would be helpful for you to be aware of, because it was a well-reasoned presentation.

Secretary ADAMS. It was Mr. Altschuler who came in and said that.

Mr. CLAUSEN. That is the name, yes. Thank you.

Now, I just also want to make another point. You talked about the division of problems out there in the Los Angeles basin, and while this is essentially Mr. Anderson and my other Southern California colleagues, this is an important thing that I think is developing out there and I just want to bring it to your attention while you are here. There are two people on the board of supervisors down there that impressed me as really having a grasp for the Los Angeles situation; that is Pete Shebarim and Kenny Hawn; these are the two supervisors.

Now, I went down and met with them during the Christmas season, and they are putting together, and they have put together a county transportation commission that is going to sort of sort out the kind of problems that they face which are unique. And I have come to the conclusion—and I am just retracing some of the steps that were taken when they were trying to grapple with this problem years ago. Bill Ruckelshaus, when he came in before this subcommittee when he was the Director of EPA, after having evaluated the Los Angeles situation, he said that most of their transportation needs, environmentally and from the standpoint of basic transportation efficiency, would be realized by some form of public transportation that was highly related because of the complexity of the problem. And I thought you would like to have the benefit of that, for whatever value that it will serve.

But I am encouraged by the fact, having met with these people, that they are trying to sort out their differences and their problems,

and as I say, this is not my congressional district, but as you know, I feel that I have a responsibility to look at other sections of the State as well as my own.

Secretary ADAMS. Thank you, Mr. Clausen.

Mr. CLAUSEN. Now, if your legislation as proposed is enacted exactly as it is written, what energy saving would result, because you placed heavy emphasis on this, and then what is the basis for this estimate? Can someone answer that?

Secretary ADAMS. We will give you an estimate on that. We have it mostly completed, and we will supply that to you for the record. One of the missing pieces, which will have to come on a little later, is the energy-related transportation expenses, the so-called coal roads, coal rail transportation, and so on. Our proposal is tied closely to the energy bill; we would have been able to supply better energy estimates to you today if we knew in what form the energy bill would emerge.

Another part of the package involves our fuel economy standards. I can give you today the savings that are involved in 55-mile-per-hour speed limit enforcement and the new mileage standards that are out for automobiles. If we can keep basically the same number of miles being driven, put in the new fuel economy standards and have the 55-mile-per-hour program in effect, we can come very close to meeting the 10-percent reduction by 1985, that the President wants. These energy savings are of enormous significance.

Mr. HOWARD. If the gentleman would yield.

Mr. CLAUSEN. Yes.

Mr. HOWARD. I believe the figures that we did have relating to the 55-mile-an-hour speed limit, if it were being completely adhered to, were savings estimated at 200,000 barrels, or 8,400,000 gallons per day. So, we can just try to estimate what percentage of that is being saved by the current adherence to the 55-mile-an-hour limit.

Secretary ADAMS. To illustrate, the 1981 to 1984 fuel economy standards for new passenger automobiles that we established in July, will save an estimated 10 billion gallons of fuel per year. You start to get astronomical figures when you have any kind of a variation in automobile mileage and usage. The fuel standard for light-duty trucks, which we are presently discussing would save 3 billion gallons per year. Just having such a thing as a tire inflator indicator to indicate whether your tires are appropriately inflated can save as much as 2 billion gallons per year. And the 55-mile-per-hour speed limit has already been referred to by the chairman.

I can supply the rest of our energy assessment to you, Mr. Clausen.

Mr. CLAUSEN. Well, yes, I think it would be helpful if you could embellish upon that and, also, I think it would be helpful to the committee, Mr. Chairman, if we had copies of all of the energy reports that you have so that we can have them as part of our record and we can make an evaluation of how you have arrived at conclusions, independent of what you have done; I think it would be helpful to us, so that we are operating from the same base of information and then we can compare that with other information we have.

I would ask unanimous consent that the Secretary submit these to the Committee.

Mr. HOWARD. Without objection, so ordered.
[The following was received for the record:]

[DOT submission for the record:]

The highway and mass transit programs are basically federally assisted State and local programs with the States and local governments making decisions on the type and programming of projects. The impact of this bill on energy consumption would vary depending on how the States and local governments choose to spend their transportation funds. For this reason, and because of the increased flexibility in the use of transportation funds allowed State and local governments, it is difficult to quantify energy impacts of the proposed bill. However, it is possible to determine qualitatively the direction of energy impacts.

The reduction of categories and increased flexibility in the use of Federal-aid highway funds would permit these funds to be targeted for projects which best serve the needs of State and local areas, thus improving the energy efficiency of the highway network. The continuation of the Interstate rehabilitation program, with the apportionment formula adjusted to focus on most heavily traveled segments, will prevent the energy waste which results from deteriorated highways. The expanded bridge rehabilitation and replacement program will reduce the need for inefficient traffic routings.

Copies of three recent reports¹ on energy are attached:

1. Federal Highway Administration, "Energy Conservation in Ground Transportation—A Comparison of Alternative Strategies," August 1977.
2. Federal Highway Administration, "The Expected Impact of the National Energy Plan on the Federal-Aid Highway Program," January 1978.
3. Urban Mass Transportation Administration, "The Role of Public Transportation in Contributing to the Goal of Energy Conservation," September 1977.

Mr. CLAUSEN. I have some other questions, but I think I will submit them to you in writing, so as to give the other members an opportunity. Thank you. (See page 182.)

Secretary ADAMS. Thank you.

Mr. HOWARD. The gentleman from New Jersey, Mr. Roe.

Mr. ROE. Thank you, Mr. Chairman. I share the encomiums that have been extended here today by all members on behalf of Brock, your secretariat, and we are pleased with the outstanding job you are doing.

I do not want to take a lot of time, but there is one point that bothers me in this presentation. First of all, I applaud the consolidation approach that you are taking and the flexibility that you are building, and I think it is long overdue. But in your statement where you are referring to completion of the Interstate System, if I may quote, you say:

Our goal is to complete the interstate system by 1990; to do so, we need some firm benchmark dates, and our proposal requires that either interstate segments be withdrawn or that the environmental review process be finished by October the 1st, 1982, and then further construction, and so forth, to begin on October 1st, 1986.

Now, what bothers me is that, basically, in most of our public works construction programming, we are delayed constantly—and this is going to be unpopular, but I have to say it anyway—we are delayed constantly by the environmental impact statement process. And quickly, for the record, so I am not misconstrued in any way in any press, I want to make the point of view that I am not opposed at all, and nobody else is here, to proper environmental review; I think

¹ See appendix, page 263.

we all agree on that, and we have found that that has been helpful to us.

But what bothers me is that those target dates you mentioned could very readily become nonachievable, unless we put a dimension on the time frame for an EIS report to be made. In other words, I am thinking, for example, Mr. Chairman, of I-287 in New Jersey, where we have had about five or six different proposals, which is virtually a nightmare, by DOT-State, and then some commiseration with Federal, and then another plan comes up. The EIS is started on one plan, and then a new plan is projected on which there is a little bit of agreement on and another EIS is started, and so forth.

There is no time constraint on how long an EIS statement ought to take. What is your view toward that?

Secretary ADAMS. The reason we put the date in, Mr. Roe, is so that all States and other groups would be on notice of when the process had to be completed. I have also gone to the Council on Environmental Quality and Secretary Andrus of Interior who discussed the idea of having in the Federal Government for environmental impact statements a single stop. I have also instituted administrative procedures to get those EIS's out of the Department.

In fact, I think I cleaned up nearly all of them that had been left over; I started with the ones 15 years old and worked my way forward.

So, we have cleaned up our administrative handling of EIS's within the Department. The date in the bill is, to us, realistic in terms of getting those EIS's approved, and we have to put people on notice that within that period of time they have to complete the EIS process. Litigation generally follows EIS approval, if there is going to be litigation. In sum, we think the date is a realistic one and establishing such a date is the way to approach ensuring completion of the Interstate System.

Mr. ROE. I am not faulting, Mr. Chairman, the approach to establish target dates; I think that is important, because that is setting, in effect, the guideposts as to what we are trying to achieve. I am wondering if we should specifically write into this legislation that from the date an EIS review is started or required on a particular project, there is one year to complete the EIS report.

The reason I suggest this, Brock, is for this purpose: There are some people that have made a career out of being an environmentalist, and I do not mean this unkindly. On the other hand, it is to the advantage of some people to constantly delay. And it seems to me that if we set a floor and a ceiling on the time frame, then we are going to be expediting that particular project. There may even be a penalty involved if they do not complete it in that length of time, because many people have to bring in different expertise in many areas—fish and game, historic sites, and ad infinitum—and if those people who are experts, supposedly, in that field are taking longer, and longer, and longer because they have too much work to do, cannot meet the target date, no matter what the State does, they cannot achieve that time frame.

And if you were to suggest to me what I believe to be one of the most important elements in this whole new innovative approach,

which, again, I applaud, is we have to set time constraints that are reasonable, because—just the point you are making—there are a lot of people I know in my State, that no matter what we do on an EIS, if it were to be the best report in all of the world that could be made, they are going to file a suit the minute it is done, and that is not what we are trying to achieve. So, I think we ought to be considering writing some time constraints in the legislation, where we would come back and say that once an EIS is ordered up on a particular project, that it must be completed within a given set of time.

Secretary ADAMS. We think this is a better approach. You may want to look at it in a couple of years to see whether or not it is moving the way we expect. We always work with local authorities to produce an EIS and to get it approved. Of course, we also do the best we can to be certain that the EIS is proper, in both process and substance. And we want to be sure that we can successfully defend the EIS if suit is brought against it. The date we establish provides a reasonable time period in which to get these EIS's completed.

If we were to establish a specific time limit for the completion of each EIS, and if that deadline date were reached and the EIS were not ready, the punishment would be to lose the whole segment. We did not think that we should be that harsh and our approach, which gives sufficient lead time and notice, as well as an ultimate deadline, should get the job done.

Mr. ROE. If I may, Mr. Chairman, and then I will conclude my comments here, I wonder if we could have the Secretary of the Department make available to the committee, a history on the EIS programming as to what the time frame has been across the board on completing EIS statements.

Secretary ADAMS. You want, I think, just the more controversial ones, do you not, because there is an enormous number of them.

Mr. ROE. I understand. A sampling, an overall review.

Secretary ADAMS. Do you want just Transportation's timetable, or do you want the timetable that also involves Interior and other agencies in some cases?

Mr. ROE. Well, I think we ought to have the facts to see where, if at all, it is delayed and for what reason; this is what we are trying to ascertain.

Secretary ADAMS. All right. Yes, we will supply that.

[The following was received for the record:]

[DOT submission for the record:]

EIS completion is basically a two-step process: (1) technical studies and preparation of the draft EIS; and (2) circulation for comment, revision, and approval of the final EIS.

On major Interstate projects, technical studies typically require from 9 months to 1 year, with air quality/noise analysis requiring most of the time. Actual writing requires up to 6 months. A substantial amount of preliminary engineering and public participation, both of which are required independently, are done concurrently with the environmental documentation. For example, basic soil studies needed for highway design can be carried out at the same time as air and water quality analysis.

Draft EISs are circulated, with a 45-day comment period provided. The comment period generally coincides with the notice period leading up to the formal public hearing on highway location. A final EIS is then prepared, incorporating any comments received; this usually requires 3 to 4 months. After

the final EIS is completed, it must be approved by FHWA and at the Departmental level, and must be filed with EPA and commenting agencies for a mandatory 30-day waiting period. The following summarizes the total time required to complete the EIS process:

Preparation of draft EIS—365 to 550 days

Circulation of draft EIS—45 days

Rewrite of final EIS—30 to 180 days

FHWA and DOT approval—60 to 120 days

Filing with EPA—30 days

If there are major planning or environmental issues, or substantial controversy, these periods could be extended to permit resolution of issues.

In the early 1970's following passage of NEPA, the Department of the Interior review at times constituted a major time delay. In recent years the DOI review process has been streamlined and delays cut substantially. Two areas of DOI responsibility that may require extensive negotiation and resolution of issues are archaeological/historic preservation concerns and endangered species protection. Detailed archaeological analysis on a selected alignment may sometimes take up to 1 year, depending on the staff resources available. Similarly, studies and preparation of a biological report for endangered species can be time consuming. Early attention to both of these areas during or before draft EIS preparation may forestall some of the delays later in the project planning and approval process.

Mr. ROE. Thank you, Mr. Chairman.

Mr. HOWARD. Thank you. I thank the gentleman from New Jersey. And, of course, in writing legislation in this field, as you said—and we have discussed it before—there is the distinct possibility that the entire legislation would be sequentially referred to the Merchant Marine and Fisheries Committee, and we have to take that into consideration.

Secretary ADAMS. You are correct, Mr. Chairman. I forgot to mention the 404 permits in addition to the others.

Mr. HOWARD. If you would include in your report portions of EIS's which may have cleared your concern and consideration, but which may also be held up for a great amount of time by the Department of Interior, just a mention of that would be appreciated.

Secretary ADAMS. It has been my position in talking with the other agencies of the Government that we should have one hearing and a single stop. I have not as yet prevailed on that, but that is my position.

Mr. HOWARD. Thank you. Someone might write down the numbers I-195.

The gentleman from Mississippi, Mr. Cochran.

Mr. COCHRAN. Thank you, Mr. Chairman. Mr. Secretary, I want to thank you very sincerely for being here with us and sharing with us your attitudes toward the legislation and what is in the administration bill to help us better understand the proposals.

I have one observation to make, and that is that while there does seem to be a great deal of new flexibility created on the parts of State and local governments in how they are going to spend transportation dollars, it seems that hand in hand with that is going a lot of new power to the Secretary of Transportation. And I assume that there is no inconsistency in this, but, for instance, I notice that in relationship to the large metropolitan areas, the Secretary might be able to super-impose the judgment of the Department over that of local elected officials in how the transportation system is going to be

integrated in with other needs, such as housing, environmental, and others.

And in relation to the smaller communities, I wonder, for instance, if that same thing is not true. For instance, what happens to 10 percent of the earmarked funds for public transportation in the small urban and rural areas if it is not spent for public transportation, mass transportation?

Secretary ADAMS. If they did come in and say there is absolutely no way we can spend it, they could get a waiver. With regard to the areas of 1 million and above, that is the only area in which we have established a requirement of secretarial approval of transportation plans. The reason we did that is because we often use discretionary funds in those areas for massive new programs. In these urban areas, it is important that we integrate transportation needs, air quality standards, the environmental standards and other factors into a total plan for the area. That is the reason the secretary should review the total plan in these areas.

But this requirement does not go into the other areas of flexibility.

Mr. COCHRAN. So, if a local community that would be classified as small urban decided that it needed the 10 percent of the funds that it was allocated for streets, highways, or some other road, would its judgment prevail, or would the judgment of the Secretary of Transportation on whether it got what would amount to 10 percent fewer dollars for its transportation needs prevail?

Secretary ADAMS. That would depend upon the State, because in the small urban and rural areas, the recipient of planning and funds is the State government, as is presently there for secondary highways. We put this program at the State level because, for one thing, individual small communities, counties, cities, and light density rural areas generally do not have the resources to undertake the necessary planning, application, and so on. So, we left that with the State authorities.

Mr. COCHRAN. OK. One other, I suppose, related question is that in your testimony about how that money for small urban and rural areas could be spent, in addition to earmarking 10 percent of the funds for public transportation purposes, you say that, as with the urban highway program, projects on any road, not on the interstate or primary system, will be eligible for funds under this program. Does that mean that city streets or county roads would be eligible for development with funds under this program, if it was the judgment of the State that some amount should be made available for those purposes?

Secretary ADAMS. Yes.

Mr. COCHRAN. Could a qualified project be also a roadway that is classified a parkway and is under the jurisdiction for construction, maintenance, and upkeep of the National Park Service, such as the Natchez Trace Parkway, for instance, which is a parkway under the National Park Service jurisdiction that goes through the States of Mississippi, Alabama, and Tennessee which is not yet completed?

Secretary ADAMS. That is under its own appropriation and authorization out of the Park Service.

Mr. COCHRAN. That is right, but if the State elected to allocate some of its funds, under the small urban and rural section of this proposal, to construction of parkway, even though the parkway is under the jurisdiction of the National Park Service, would that be permissible under the administration bill?

Secretary ADAMS. Yes, just like with Great River Road, or one of the others. We are trying to let State officials have the flexibility to do what they believe should be done, within the limits of the funds that we have.

Mr. COCHRAN. But, of course, following still further on that point, if the State did elect to do that, they would have to come up with 20 percent to help pay the total cost.

Secretary ADAMS. That is what I was going to say to you. They would have to go under the regular formula if they wanted to fund it from the basic program.

Mr. COCHRAN. Okay. That is very helpful to me in understanding your bill. Thank you very much.

Mr. HOWARD. The gentleman from Washington, Mr. McCormack.

Mr. MCCORMACK. Thank you, Mr. Chairman. First I want to congratulate Secretary Adams for the outstanding job he is doing. Unfortunately, I was chairing another committee meeting this morning and missed the first session, and I apologize for that.

I have only one question, and I hope that I am not repeating, but it has to do with the assumptions of the Department with respect to energy conservation in supporting transit systems. It is my belief from the studies that we have done that it is a rare case, indeed, when a transit system on rails will actually provide any savings in total energy for the system, especially as compared to the automobiles we expect to have in the near future, and while I applaud the idea of mass transit systems for the function they can provide, I was curious to know if the Department is making any basic assumptions on energy consumption of transit systems, as compared, for instance, to energy consumption from small cars, assuming total energy systems.

Secretary ADAMS. I can give you just one basic example of the impact of transit on energy use. If there were not a New York subway system, the use of automobiles to carry equivalent traffic would result in an astronomical increase in use of the petroleum resources of the country. Now, this will vary from area to area, depending upon the way the system is constructed, the number of people that are on it, and the interface between automobiles and public transportation systems.

That is why we have tried not to dictate, in any way, to people in local areas whether to build a fixed guideway, improve or extend their fixed guideways, go to separate bus lanes or to carpooling or vanpooling. But there is no question that if you can move the garage to the edge of town and break part of the downtown movement of traffic, you have a significant energy saving. The energy saving is qualitative, as you know, Mr. McCormack, as well as quantitative, because electrical energy can be produced by sources other than petroleum. You and I both share the same belief; we would like to see another source of energy developed for automobile traffic. But at

this point, auto traffic means petroleum usage, which is where our shortage lies.

Mr. McCORMACK. Thank you, Mr. Secretary. The only point I was trying to get at was the possible failure to perceive the energy requirements involved in building rail systems. Obviously, we have one in existence, such as New York City, who are way ahead in using it and maintaining it. The danger is assuming that building a rail system where you do not have one will automatically save energy, although it may be better to use electric energy than gasoline. I am simply running up that small warning for your thoughts. Thank you.

Mr. HOWARD. The gentleman from Pennsylvania, Mr. Myers.

Mr. MYERS. Thank you, Mr. Chairman. Mr. Secretary, I also want to thank you for coming up here today to discuss the bill and proposals.

Recently, I held a number of hearings in my district on mass transit and highway proposals to try to get a feel for some of the local experience in these programs, and I would like to bring to your attention some of the concerns that some of the people at the local level have about the Federal program.

We were surprised to find in one small community that a private operator was still able to be profitable running a bus one day a week, with the people, knowing that the bus was going to be around on Friday, scheduled doctor appointments, and one thing and another for that day. Is the plan that you have for Federal legislation going to continue, if funds were available for small communities, to have that type of flexibility? In other words, you would not have to have a massive system that delivers service every 15 minutes or one-half hour, or so, but if the community wanted to provide a bus one day a week or two days a week, or from one community to another one day a week, and so forth, will that flexibility be available?

Secretary ADAMS. Absolutely. Our whole thrust in the small urban and rural section of this bill is to meet the need of the smaller community, where we now provide very little transit assistance. But we are not trying to say, that in light density areas ought to have any particular kind of transit system, particular frequency or a particular dispatching mode.

We are trying to assure that some public transportation will be available in the lightly populated areas. A number of Members of Congress representing rural districts have come to us to say, "We are not certain exactly what we should have, but we are just telling you that our people out there have nothing." We want something in this bill to address that problem, and it is in response to that expression of need and concern that we have proposed our consolidated program.

Current law has a rural program. It has been authorized by this committee and by the rest of the Congress, but it has not been really solving the problem, and so we are trying to establish an effective program. Twenty-five percent of the annual travel in the United States takes place off the federal-aid highway system; and our proposal would provide for those needs.

Mr. MYERS. To follow on the same concerns—and I assume the answer is going to be positive on this one, as well—one concern was

that local transit, particularly a small transit system, cannot fund trial routes. In other words, they cannot risk the financial stability of the system to try what they think is a reasonable venture.

Is there flexibility within your program so that if the States want to have a set aside for trial route periods that that could, in fact, be accomplished by small transit authorities?

Secretary ADAMS. Yes. If they wish to apply to us for a demonstration project, they can do so, and it is allowed under this legislation.

Mr. MYERS. Part of the problem with the intermix in the Trust Fund of the highway source and mass transit is the uncertainty about how much money will flow from those people who are paying the user's tax to those who are not paying the user's tax; in other words, mass transit users.

Can you give me an estimate of what is the maximum amount of money that could flow from the Trust Fund into mass transit under your bill?

Secretary ADAMS. Since 1973, the law began to allow such transfers in urban areas, some \$115 million has been transferred out of it. Last year, \$30 million was transferred.

Mr. MYERS. Are you saying, if all the flexibility that you have suggested in this bill were to pass the Congress and be put into law, the maximum amount of Highway Trust Fund money that could go to mass transit is \$100 million?

Secretary ADAMS. No. Presently about \$800 million is available to be moved to transit annually. We do not change that figure.

Mr. MYERS. But the question is this—and once again, I reflect on the concern that people have about the mix and the uncertainty of how much can be moved or would be moved—how much is the maximum that could be moved from the Highway Trust Fund to transit use, either as capital or operating expenses?

Secretary ADAMS. The amount that can be moved from the Trust Fund is approximately the same as it is now. But that is up to the local decision in each area. We have in existence now an urban highway and public transportation fund. But the existing program has not worked well, the money has not gone out from it. Our proposal is designed to improve the effectiveness of this program.

Mr. MYERS. You are saying about a \$115 million level?

Secretary ADAMS. No. There is available now around \$800 million in the urban highway program. This bill would make available between \$800 and about \$950 million, if the locals decided to shift it. None of these trust fund moneys are available for transit operating subsidies; this is all construction.

Mr. MYERS. One concern I would like to express about the smaller communities, when you talk about designated recipients, is that a number of them become captives of a larger metropolitan municipality or a county. And although they are counted in the numbers which draw money to the recipient metropolitan area, they actually have very little leverage in extracting the benefits from the designated recipient.

So, I have had some complaints that larger recipients are not interested in the small communities, and it is just a word of caution

that utopia is not a grandiose regional recipient, because I am not so sure that rural and smalltown areas in the metropolitan area will benefit much from that.

Secretary ADAMS. I do not want at all to sell it as utopia, Mr. Myers. I agree with you completely. We have interviewed county planning groups within States, and there is a great deal of contention that goes on day by day out there. We are not changing local governments, or whether the State will be better to them or not. We are requiring the State to consult with them in developing transportation plans and programs, but if the State cuts them off, we at the Federal level just simply cannot address that down in individual communities. In the areas of \$1 million and above, we are looking at those plans, because they involve so much discretionary money.

And I do not want to paint this picture too black, because it really is not. The local officials and the State departments of transportation are beginning to move together as a unit, and they are doing extraordinarily well with this in many States. A lot of the old fights are finished. I have been meeting with the heads of State departments of transportation, four and five at a time at lunch now for an entire year, and they admit that there are still problems, but they say the level of acrimony has gone way down and that they are beginning to make it work.

Mr. MYERS. The gentleman from California wanted to ask a brief question.

Mr. CLAUSEN. I think he has touched on a very significant point, which I am sure you are aware of, and that is, when we talk about coordinating through the States—and I am all for that—but within the confines of the State—let us take California, or you could go to Pennsylvania—when it comes to the allocation of funds and the possible diversion of allocations that might come from what we allocate here, sometimes the set of priorities that they set in the State of California does not necessarily meet the entire need.

As an example, Los Angeles and Orange County in San Diego could literally eat up all of the allocation that would come to California, and you do not have the chance to complete the system in the other sections of the country. So, this is the kind of thing we are really going to have to address, and I appreciate the gentleman yielding.

Secretary ADAMS. We retain basic categories of assistance to prevent there being a complete movement of money to one area. But there will always be a problem as to where the money shall be spent. I do not want to downgrade the fact that States or local governments can still fight about it.

Mr. CLAUSEN. Well, the only point I am making is that we are going to have to tighten up this—flexibility is a good thing, and I am for this, but not to the point where it stops our ability to complete systems. That is the only reason that we should stay in the financing of some of these systems, if we can carry that out. Otherwise, you know, we from California would be just as well off to not involve ourselves in a national trust fund; leave the sources there and we would pick it up and do it out there.

But my reason for staying in this is because I believe that there is a chance for us to maintain the kind of protection for the completion of systems in the urban and the rural.

Mr. MYERS. Mr. Secretary, there is one other point I would like to cover, and that is bridge repair. I think that the administration's suggestion is too low. I have been generally of the feeling that we ought to be committing about 1 cent of gas tax, or somewhere around \$1 billion or \$1.2 billion, to attack the problem.

There is one other area in which I have not gotten a lot of sympathy, either among my colleagues in the House, or on this committee, or from the administration, but it concerns me greatly. I am concerned that any increase—even the administration's increase—will not be picked up rapidly enough to address the serious bridge problems.

In other words, right now, the States have to come up with about a \$50 million match to pick up \$180 million that is available at the Federal level. Even under your low level of funding and an 80-20 split, they will have to double that to \$100 million to match the Federal funds. And if we were to go to the billion-dollar level and a 90-10, they would still have to double.

I have suggested—and I think that the administration, as well as the committee ought to think seriously, about what we are trying to accomplish in bridge replacement—we should get some of the more serious problems behind us as quickly as possible for energy efficiency, for safety, and for a number of other reasons.

But it would seem to me that one of the legitimate tracks might be to provide 100 percent funding at the Federal level for a short period of time. I have suggested 3 years; perhaps 2 or 1 year might be more appropriate. I realize that less money will be spent, theoretically, on bridge repairs if we went for that, because there is not that match. But I believe, in reality, that more money will be spent, because I think a number of States will not be able to make the match in the increased funds under your or the subcommittee's proposal.

In that connection, is it my understanding that none of the bridge funds in the speciality bridge program can flow to any other category in your bill? Is that correct?

Secretary ADAMS. That is correct.

Mr. MYERS. I would like to point out to you that you, therefore, have made a commitment to repairing bridges because you think that it is important and you do not want those funds to compete. But, in reality, when it comes to the States matching their money, the bridge program is going to compete against all other funding. They are going to have to come up with 20 percent, which directly competes with all other State-matching programs.

So, if we believe at the Federal level that the problem is serious enough and needs to be accelerated at the front end of the program, I would think that the appropriate thing to do would be to assist in that area and give it a little nudge at the beginning. I do not happen to accept the theory that the States will frivolously build some bridges that are not needed. I think they will know that it will be a limited number of years of 100 percent funding and that perhaps they had better get their worst bridges behind them.

You know, we have examples in a number of pieces of legislation where we have appropriated or authorized money, and it simply has not been picked up. I do not think we can afford in this serious bridge program to allow that to occur. We would be subjected to great criticism if we had a couple major bridge failures.

Secretary ADAMS. I understand your concern. We are recommending a funding level of \$450 to \$500 million per year in 1979 through 1982. The level has been running at less than \$200 million a year. Now, Pennsylvania happens to be one of six to eight States that does not have matching money for almost any of the programs. There is nothing at the Federal level we can do about that at this point.

Mr. MYERS. I agree with that.

Secretary ADAMS. Our problem on bridge construction is not just the availability of State-matching funds. There has to be an EIS; we have to go through the design problems and get the necessary permits. So these projects come online in increments. The bridge problem we face is an enormous one, but we felt the amounts contained in our bill represented what we could reasonably expect to come online in the next 2 years.

Mr. MYERS. There have been some bridges where a failure has occurred, even in Pennsylvania, in which a bridge was brought back in service in a short period of time, simply because it needed to be done, and even at that, authorities were scratching to find funds for it. I am just concerned that although we want to solve the problem, we will not be able to under your mechanism.

I would like to briefly just say that one other thing that came up continually at every hearing that we had on mass transit was the concern about what the new regulations on providing service for the handicapped would do to the transit systems. A number of the local transit authorities think that they can service the handicapped in better fashion and with less disruption to the total system by more personalized service.

I am sure you have heard that. I just want to reiterate it. They are greatly concerned about the cost and interruption of reasonable schedules, and so forth, and if the word has not gotten to you, I just wanted to bring your attention to it.

Secretary ADAMS. It has.

Mr. MYERS. I assumed it had. In closing—and I know that the chairman has been very generous to me—it seems to me that rather than a couple hundred million that could be transferred from the trust fund to mass transit under your plan, that 50 percent of the primary funds, which is \$1.5 billion, can be transferred to small urban and rural, which would mean that up to half of those, up to about \$786 million, could go to mass transit, plus all the rural and urban highway funds could go to mass transit. So, you are talking about a couple billion dollars that could go to mass transit, and it is that uncertainty, I think, that most of us deal with.

Secretary ADAMS. We will give you a written answer to that. We do not contemplate that all funds that could possibly be used for transit would be so used, but we will give you a written answer.

[The following was received for the record:]

[DOT submission for the record:]

Under existing law, Highway Trust Funds may be used for public transportation capital projects under the Federal-aid urban system (FAUS) program. There is an annual authorization of \$800 million for this program, which is the "maximum" amount currently eligible for this purpose. Since this provision was enacted into law in the 1973 Highway Act, however, out of the total 5-year authorization for FAUS, only about \$115 million or 3 percent, has been committed by the States and cities to date for mass transit projects.

Our proposed legislation continues the eligibility of transit capital projects in the urban highway program. Such projects would also be eligible for Trust Fund monies under the small urban and rural program we propose. Transit operating expense projects are also eligible under the small urban and rural program, but the Trust Fund would be reimbursed from the General Fund for any operating expense projects. At least 10 percent of a State's apportionment for the small urban program must be spent on transit projects unless the Secretary waives the requirement. Finally, up to 50 percent of a State's primary apportionment could be transferred to the urban program or the small urban and rural program, and funds so transferred could be used for transit purposes. The Administration's bill also provides that up to 50 percent of an urbanized area's formula transit funds may be used for highway projects.

In theory, therefore, all urban program apportionments, all small urban and rural apportionments, plus 50 percent of primary apportionments would be eligible for use on transit projects. The experience with the FAUS program to date, however, suggests that transfers to transit will probably be quite modest.

The actual commitment of these funds will be decided by State and local officials in accordance with their own transportation priorities. We believe that the flexibility provided these officials by our proposals is vital and that it will contribute to effective transportation decision-making. We anticipate, for example, that an area might choose to use "highway" funds for a relatively large transit project which is a local priority in a given year and, in another year, use "transit" funds for a relatively large highway project. We do not anticipate, however, that in the national aggregate there will be a large increase in the use of Trust Fund monies for transit purposes, given highway needs and given the availability of other funds for transit purposes.

Mr. MYERS. My position is I think I could justify voting for a 1-cent gas tax if that was going to go to mass transit and I knew that is what the limit was, and I think maybe some of the Members could do that. But the uncertainty about what is going to happen to highways in competition for mass transit, I think, really holds back the commitment of many toward using the gas tax for transit.

I think Mr. Howard's motion on the floor was an appropriate situation. We knew how much was going to go to mass transit and we could tell our constituency that we voted for 1 cent or 2 cents, or whatever it is, a gallon to go to mass transit. I think that kind of a mechanism would allay a lot of fears in this competitive situation. Thank you very much, Mr. Chairman.

Mr. HOWARD. The gentleman from Georgia, Mr. Levitas.

Mr. LEVITAS. Thank you, Mr. Chairman. Mr. Secretary, I want to also say that I think the administration's proposal has a great deal of merit to it, and in many ways is long overdue. I think the reduction of categories, the standardization of formulas, the flexibility, and the greater discretion given to State and local governments are major steps forward which I believe will receive great support from the committee and from the Congress.

I have certain specific areas about which I have concerns. One is the discretionary versus formula approach for mass transit funds, and what appears to me to be an inadequacy of available discretionary funds for the country. That appears to work against the encouragement given to those areas where strong local initiatives and support take effect.

Secretary ADAMS. We have carefully looked at the areas in the country where we have potential applications for discretionary funds. We believe we have provided sufficient money to meet the needs of those cities. The number of cities that are in that discretionary category is less than 15. You can argue as to where we might have potential new starts, but it is a very limited number.

We have issued letters of intent, and we have a program established in most of those cities to meet their needs on a discretionary basis. The formula is to take care of the continual rolling needs of a great many parts of the country and is built on the highway program experience. The formula approach really gives you the ability to attack the transportation problems of various areas more effectively and efficiently.

Mr. LEVITAS. Well, I would like you to furnish me, if you would, a breakdown of the portion of the discretionary funding which is anticipated to come from the interstate transfer, not by dollar amount, but by anticipated jurisdiction. It is my understanding that over half of the funds under the discretionary formula are anticipated to be derived from interstate transfer.

Secretary ADAMS. Some funds for transit uses will come from that source. We have estimates, which we will supply to you, of what we think will be transferred to transit uses from the interstate program. But of course we cannot control that; that is up to the governments that are involved. We can give you the amounts that have been transferred in the past; we can tell you what people have indicated to us they are going to do. But, of course, I cannot give you any absolute answers that a particular amount will be shifted in any one year.

[The following was received for the record:]

[DOT submission for the record:]

The Administration bill contains a FY 1979 authorization of \$1.315 billion for the mass transit discretionary program, of which \$675 million is provided for Interstate transfer substitute mass transit projects. This would be more than one-half of discretionary total.

It is very difficult to provide a jurisdictional breakdown of the amounts to be provided through the Interstate transfer program. The allocation of resources under this discretionary program depends upon the rate at which substitute projects for withdrawn Interstate routes or segments are identified, recommended for advancement through the local planning process, and approved by the Federal government. The attached chart shows those cities which have withdrawn Interstate segments as of 3/31/77 and the level of transit projects that have been approved. Any additional withdrawal requests from cities other than those with an approved withdrawal are also likely to involve substitute transit projects which will need to be accommodated. We are aware that officials in the following areas are considering requesting withdrawals: the District of Columbia; Tucson, Arizona; Chicago, Illinois; Salem, Oregon; Baltimore, Maryland; Northern New Jersey; Denver, Colorado.

INTERSTATE TRANSFER SUBSTITUTE MASS TRANSIT PROJECT APPROVALS

Project No.	Grantee	Approval date	Project scope	Dollars
Fiscal year 1974:				
MA-29-0001	Boston (MBTA)	June 28, 1974	Engineering and environmental studies for rapid transit corridors.	10,000,000
PA-23-9001	Philadelphia (SEPTA)	do	Purchase of 70 electric commuter railcars, and facilities and station improvements.	51,000,000
Total fiscal year 1974				61,000,000
Fiscal year 1975:				
MA-23-9001	Boston (MBTA)	Oct. 17, 1974	Final engineering and construction of the Red Line (South Shore) rail transit extension from Quincy Center to South Braintree.	23,040,424
MA-23-9002	do	June 30, 1975	Purchase of 40 rail transit cars (6 Orange Line, 34 Blue Line) and modernization of 100 Orange Line rail transit cars.	42,688,360
Total fiscal year 1975				65,728,784
Fiscal year 1976:				
IT-23-9001	D.C. (WMATA)	Oct. 2, 1975	Support construction of the Metro rail system.	286,560,000
MA-23-9004	Boston (MBTA)	Apr. 8, 1976	Acquire and reconstruct the Midlands Branch (9.1 mi) of the Penn. Central for passenger service.	12,800,000
MA-23-9005	do	do	Rail transit extension along Penn Central Shore Line (MBTA owned) to Boston Back Bay Station, including completion of the South Cove tunnel.	26,950,400
PA-23-9001-1	Philadelphia (SEPTA)	Apr. 20, 1976	Purchase of 18 electric commuter rail cars.	11,184,588
Subtotal, fiscal year 1976				337,494,989
Authority adjustment				+146,000
Total, fiscal year				337,640,989
Transition quarter:				
MA-23-9002-1	Boston (MBTA)	July 19, 1976	Amendment to fiscal year 1975 project for purchase of 70 Orange Line rail cars (substitutes for the modernization of 100 Orange Line cars provided for in MA-23-9002).	18,418,920
IT-23-9003	D.C. (WMATA)	Aug. 30, 1976	Support construction of the rail system.	112,553,760
MA-23-9006	Boston (MBTA)	Aug. 30, 1976	Acquire and upgrade the 270 mi of the Boston and Maine RR right-of-way, related facilities and rolling stock.	46,308,960
MA-23-9009	do	do	Modernization of 88 Red Line rail transit cars.	14,099,368
MA-23-9010	do	do	Advance land acquisition loan for the purchase of Boston and Maine rail right-of-way.	24,172,750
Subtotal, transition quarter				215,553,758
Authority adjustment				-146,000
Total, transition quarter				215,407,758
Fiscal year 1977:				
MA-29-9001-1	do		Studies of Orange Line relocation from South Cove to Forest Hills and Red Line extension from Harvard Square to Arlington Heights.	3,000,000
CT-29-9001	Hartford (GHTD)	Apr. 3, 1977	Preparation of an architectural and engineering study for the conversion of Union Station in Hartford into a multimodal transportation terminal.	199,400
IT-29-9001	Portland (TRI-MET)	Apr. 4, 1977	Corridor planning in Portland area.	428,005
IT-23-9003-1	D.C. (WMATA)	June 28, 1977	Support construction of the Metro rail system.	327,995,706

INTERSTATE TRANSFER SUBSTITUTE MASS TRANSIT PROJECT APPROVALS—Continued

Project No.	Grantee	Approval date	Project scope	Dollars
MA-29-9001-2.....	Boston (MBTA).....	July 30, 1977	Engineering and design work for an extension of the Red Line and relocation of part of the Orange Line and other rail improvement studies.	10,000,000
MA-23-9001-1.....	do.....	Aug. 30, 1977	Complete Red Line rail transit extension from Quincy Center to South Braintree.	22,296,080
MA-3-9008.....	do.....	do.....	Initiate construction of the Red Line extension from Harvard Square to Alewife.	42,009,180
Total, fiscal year 1977.....				405,928,416

	Cumulative total (mass transit projects only)	(Highway projects)
Fiscal year 1974.....	\$61,000,000	0
Fiscal year 1975.....	65,728,784	0
Fiscal year 1976.....	337,640,988	0
Transition quarter.....	215,407,758	0
Fiscal year 1977.....	405,928,416	4,927,920
Subtotal.....	1,085,705,946	4,927,920
Total.....	1,090,633,866	4,927,920

Mr. LEVITAS. My point is that a portion, almost half, of the \$6.5 billion that is deemed to be discretionary is coming, or anticipated to come from specific applications for interstate transfer.

Secretary ADAMS. As cities make decisions as to whether or not they wish to go to a rail system or to a highway system, that fits into the total amount that goes to fund mass transportation.

In Boston, for example, there has been a conscious decision at the city and State level to use a public transportation system, and to transfer interstate funds for that purpose.

Mr. LEVITAS. Mr. Secretary, I think the proposal that you make to limit Federal assistance for operating costs to one-third of those costs is something with which I totally agree and approve of. But could you indicate to the committee whether or not this is expected to be a greater amount for operating funds or a lesser amount for operating funds than the present 50-percent limitation?

Secretary ADAMS. It amounts to the same number of dollars.

Mr. LEVITAS. There is no difference in the number of dollars?

Secretary ADAMS. No; the overall total is the same.

Mr. LEVITAS. Now, is the difference based upon the amount that would come from local tax sources, as opposed to the fare box?

Secretary ADAMS. How the balance of the fund is raised is their business, whether it be from the fare box or other sources. We do not want to limit them; we just limit the total amount that the Federal Government can put in.

Mr. LEVITAS. I think it is very constructive and it is a much simpler approach to the problem.

Secretary ADAMS. It is much simpler, Mr. Levitas.

Mr. LEVITAS. In your testimony you refer to the utilization of the Governors and local officials designating one or more recipients for

urban highway funds in areas with a population of 1 million or more. Now, in many areas where you have multijurisdictional situations, in SMSA's for example, what mechanism is there going to be for deciding who it is going to be, because I can see tremendous conflict between the jurisdictions involved?

Secretary ADAMS. This mechanism has already been used in the mass transit program. There are areas where there are arguments. We do not try to dictate to the local area who the designated recipient or recipients should be. It may be the MPO, it may be the State DOT. But what we need to have in those areas—we are talking about \$1 million or above—is a single planning group and a designated recipient to which we send the funds. This will improve decisionmaking and effective use of money that has been allocated for urban areas for highways and other purposes. What we are trying to do is to say to the local people: "If you want your money, come in and give us a person," and I think they will.

Mr. LEVITAS. By State law?

Secretary ADAMS. The local officials and the Governor decide how they are going to do it.

Mr. LEVITAS. Two final points, Mr. Secretary; one is, while I have noted that you have created a mechanism for the expeditious completion of the Interstate System by permitting States to borrow from future allocations, I would like to let you know that the proposal I have previously discussed with you and others concerning a bonding mechanism will be offered by me at the proper time as an additional means for expedition in completing the Interstate System, in addition to that which you have proposed.

Also, so it will be available for you to begin to lobby against, since there is greater discretion now being given to the Secretary to make decisions which were formerly provided by statutory law, at the proper time I am going to offer a proposal for a mechanism by which the Congress will be able to deal with those regulatory decisions. I wanted to alert you to those two possibilities, knowing that you likely will not embrace them enthusiastically at this point, anyway.

One last thing: I would like to express my appreciation to you for an announcement that was made today in Atlanta dealing with two major projects in my district—the expansion of the interstate improvement program on I-85, and a decision made relative to the assessment of the rapid transit line going north into my district. I want to express my appreciation and commend you for the decision, which I think is a very good one and certainly on the right track. If, next time, you would let me know about it before they do from down home, it would be helpful. Thank you.

Secretary ADAMS. You are absolutely correct; it is our fault if you were not informed before hand.

Mr. LEVITAS. It is a good decision and I am glad you made it, Mr. Secretary.

Mr. HOWARD. The gentleman from New York, Mr. Nowak.

Mr. NOWAK. Thank you very much. The gentleman does not want to reverse that decision?

Mr. LEVITAS. No; it is an excellent decision.

Mr. NOWAK. First of all, let me just make a couple of general comments. I agree that your presentation here has been very illuminating and, certainly, your grasp of all the matters shows the time and effort that you and your colleagues have put in on this bill.

Of all these provisions, I do not think many are new concepts. We have been struggling with some of them for at least my 3 years here, and I know that many of us are very happy in principle with what was produced—the flexibility, and really trying to put a structure together that will get the funds out and moving in the community. I know that some of these concepts will be integrated with the Howard bill, and I certainly look forward to the goal of developing a workable piece of legislation. I wonder, Mr. Secretary, if we could just go back a couple of minutes to the operating cost problem. In answer to Mr. Levitas, you said that it does not make any difference. I was wondering if you could explain the rationale for moving from the 50 percent of deficit limitation to the limitation based on one-third of operating expenses, because I have heard on several occasions that it has lowered the total support of transit programs in these communities.

Secretary ADAMS. No, we have not lowered our total support. The total amount of money that has been authorized, appropriated, and made available has always acted as a lid. Requests for operating assistance have always been far in excess of the amount of money we have had available or that anybody has ever talked about having available, so that we have not been in the position of financing 50 percent of operating deficits.

Under our proposal, we have not reduced the amount of money available for operating assistance. What we have done is to greatly simplify the manner in which that money moves out, by simply going to a percentage of cost factor. This allows us to eliminate the previous requirements rather than through the very complicated procedure we had of maintenance of effort and specific local match. But the amount of money has not changed. We have never provided a 50-50 Federal subsidy for operating expenses, because there has never been enough money authorized to go that far.

Mr. NOWAK. We had some conversation here, also, earlier about energy savings related to mass transit, and it was interesting to read a couple of days ago the estimates of people that have been taken off our highways here in Washington. I think it was a Washington Post article which covered a survey they ran showing one-third of those riding the transit system said that they would have driven to work had the system not been available.

Also, over the weekend, we saw a great amount of press relating to Silver Spring, and the opening of that station. The whole gist of one article was the hope that Silver Spring would be revitalized—it is one of our older communities—by the opening of that system, which brings me to one point that I am concerned about.

On page 72 of your submitted bill, you talk about what I believe is the implementation of the Andrew Young amendment, to see what we could do with the joint development phase of the transit system in relation to community revitalization. You talk about subdivision D, I am quoting from—"the costs incurred in connection with proj-

ects for the acquisition of land and preparation of such land for urban development purposes to enhance the effectiveness of any mass transportation project approved under this Act, and which are physically and functionally related to such mass transportation projects"—that such projects would be eligible for this discretionary pot.

And you go on to include:

Such assistance can include but is not limited to the cost of demolition, site preparation, utilities, building foundations, walkways, and open space but cannot include the cost of construction of commercial revenue-producing facilities * * *

My first question would be relating to this. What is the anticipated level of funding, and are we depending to a degree on the urban policy decision to be made in the spring for substantial money to cover this type of discretionary funding?

Secretary ADAMS. Taking the second part of your question first, yes, we are depending upon decisions made in the total urban revitalization package that is being put together. In this area of joint development we are looking for seed money projects, where expenditure of Federal funds will encourage the private sector to come in and develop the area. This is designed to give the local areas the ability to do some planning and some original structuring around these stations, without trying to rebuild the whole area with Federal funds. We have got about, for example, \$10 million going into Baltimore now to start this kind of development.

Mr. NOWAK. A typical example of that could be a transit mall in a downtown area.

Secretary ADAMS. Yes, that is the type of thing that can occur.

Mr. NOWAK. I have other questions relating to the designation of recipients for planning money for urbanized areas. I might just say that just this morning, I met with a group of people who are very interested in your testimony, because they are a planning organization who did not participate as much as they would like in the transportation decisions of the particular MPO; they are already very anxious to increase that participation and I am sure will be going to the Governor and other local officials to do so. So, everybody is organized around your statements already.

Secretary ADAMS. I hope so, Mr. Nowak; that would be very helpful.

Mr. NOWAK. I want to thank you and everybody in your Department, especially Dick Page, with whom I have had great deal of contact and who has been most helpful. Thank you very much, Mr. Chairman.

Mr. HOWARD. The gentleman from Pennsylvania, Mr. Edgar.

Mr. EDGAR. Thank you, Mr. Chairman.

You had opened your statement, Mr. Secretary, very aptly by saying this is a very important day for transportation, and a very historic day. I would like to echo the comments of some of my other colleagues about the need for flexibility and some of the other important improvements that you make in the process. I think it is the most important half day in transportation. The other half of the day will come when we enact a bill that adequately addresses the needs of highways, highway safety, bridges, and also public transit.

Specifically, Mr. Secretary, you were quoted in a recent article by Larry O'Rourke of the Bulletin that in the United States, no city in the United States has a successful mass transit system. In three cities, fully half of the work trips are made by transit—New York, Philadelphia, and Chicago. Would you not call these systems successful?

Secretary ADAMS. No.

Mr. EDGAR. Could you define briefly your definition of a successful system?

Secretary ADAMS. I think a successful system is one in which you give people who wish to leave their automobiles a choice so that they do not need their automobiles in the downtown, congested area. I do not consider New York or the SEPTA system in Philadelphia—what was the third one that you mentioned Mr. Edgar?

Mr. EDGAR. Chicago.

Secretary ADAMS. Chicago; as being models that the American people are prepared to shift to. They do a magnificent job of morning people with equipment that is in many cases very old, with trackage and tunnels that are in very bad condition. They are absolutely essential for those cities. But I certainly do not cite them as a success that the other cities in the United States are going to copy.

Mr. EDGAR. Would you then say that the Lindenwold system is a failure?

Secretary ADAMS. No; I would not, but it is part of the system, not the total system. I think it is a good one.

Mr. EDGAR. I am concerned about your statement not so much because of the general comment, but I think that there are some systems that if they were to close, there would be a devastating effect on transit patterns and on energy use in our Nation. I think it is awfully detrimental to those of us who are interested in balancing our transportation priorities to make a broad-based, comment that there, in fact, are no successes anywhere in the transit area.

Secretary ADAMS. I do not know, Mr. Edgar, how you read the statement. My statement was a positive one, that we want to have some real successes in public transportation, and that we are trying to build new systems that can be copied by others. It was not meant to be a negative statement that I was in any way opposed to public transportation. I am deeply concerned that our public transportation systems are not providing an alternative to the automobile. We are not going to do away with the automobile, but there must be alternatives for trips—particularly in congested, downtown areas that are really attractive to the people.

By the middle of the 1980's, no matter what we do in terms of the present program, the price of petroleum and the shortages of petroleum are going to be of increasing concern to the individual motorist. And I want to see some new approaches to public transportation. That is what I said to Mr. O'Rourke, and when he asked me if I could point to one system in the United States that I thought was a success that could be copied by others, I could not say that I felt there was one. But I am hopeful we will produce one.

If more operations would do what the Lindenwold Line does, I would be most happy, but I think you will agree with me that, over-

all, you are holding up the SEPTA operation as one with which you are satisfied.

Mr. EDGAR. I appreciate your answer. What do you propose to do during the next 4 years, or in the long run—10 years—to keep the older systems from falling apart?

Secretary ADAMS. Spend a lot of money on them.

Mr. EDGAR. I appreciate that answer, because if I am studying your bill carefully—and I may be mistaken on this—you set a figure aside of approximately \$365 million for rail modernization. This particular amount of money, under your bill, would be folded into a formula grant program. The \$365 million for fiscal year 1979 is only some \$40 million additional than we are authorizing in 1978. I think you will quickly see that by using a formula grant process, you spread that money across the Nation. The very systems that you talk about spending some money on are not, in fact, going to get the proportion of modernization funding that they need to stay alive.

Secretary ADAMS. We will give you a breakdown of the formula funding. As you pointed out, we have increased the amount of money that can go into rail modernization. But in many cities, there are differing views as to where they want to spend their money for modernization, whether it be commuter rail or whether it be subway.

[The following was received for the record:]

[DOT submission for the record:]

The attached table describes the total apportionment for each urbanized area and the amount that can be used by the urbanized area for either capital or operating expenses. The difference between these two amounts is the amount that can be used only for capital expenses.

All of the funds can be used for capital expenses, such as rail modernization, if the recipient chooses to use the funds in this manner. The allocation to particular projects of dollars reserved for capital uses is also a matter of local priorities.

ESTIMATED URBAN MASS TRANSPORTATION SECTION 5 FISCAL YEAR 1979 FORMULA
APPORTIONMENTS TO URBANIZED AREAS AND STATES RESULTING FROM PROPOSED
DOT LEGISLATION AND UNDER EXISTING LEGISLATION

NOTES:

1. New legislation proposes an authorization of \$1735 million in FY 1979 for formula apportionment. Deducted from this are: 2% for planning and 1½% for innovative demonstrations.

Thus the amount available for apportionment is \$1675 million. In addition, 20% of the 25% bus factor (or 5% of the total) is set aside for discretionary transition grants. Thus, the total amount actually apportioned is \$1,590 million.

2. Amounts shown are based upon unaudited and unverified data submitted by each urbanized area to the Urban Transportation Administration. To the extent that there are inaccuracies in the data due to differences in collection, interpretation, or presentation; or incomplete data have been submitted; final apportionments may change to reflect improved data.

3. Data have not been received from all urbanized areas. Adjustments to totals have been made to accommodate the expected apportionments to these areas. However, apportionments for these areas are not shown. In some cases, UMTA has made estimates of subapportionments in multistate urbanized areas. Such estimates are indicated by an asterisk.

4. The apportionments have been rounded to the nearest \$100,000. This reflects the accuracy of the data at this time. The final apportionments would be calculated to a larger number of decimal places.

5. Three entries are shown for each urbanized area: The first column shows the total amount which would be apportioned to the urbanized area in FY 1979 under the current formula program. This amount can be used either for eligible operating or for capital expenses. The next two columns show the formula apportionment under the proposed legislation. The first of these two columns shows the total amount apportioned to that area. This amount can be used for any eligible capital expense (bus or rail vehicle purchases, facilities construction or modernization, etc.). The second of the two columns is that amount out of the total apportionment which can be used either for eligible operating or for capital expense purposes.

6. Some of the data used in calculating the apportionments, such as the number of 12 year old buses, change from year to year. Therefore the amounts shown are for FY 1979 only, and cannot be extrapolated for future years.

FORMULA APPORTIONMENTS FOR FISCAL YEAR 1979

[In millions of dollars]

Urbanized area	Current legislation available for capital or operating	Proposed legislation	
		Total apportionment	Available for capital or operating
Akron.....	\$3.2	\$3.3	\$3.2
Albany-Schenectady-Troy.....	3.1	3.3	3.1
Albuquerque.....	1.7	1.8	1.7
Allentown-Bethlehem-East.....	2.5	2.6	2.5
Part: New Jersey.....	.2	.2	.2
Part: Pennsylvania.....	2.3	2.4	2.3
Atlanta.....	6.9	9.8	6.9
Aurora-Elgin.....	1.4	3.5	2.7
Austin.....	1.6	1.8	1.6
Baltimore.....	12.6	20.2	12.7
Baton Rouge.....	1.5	1.6	1.5
Birmingham.....	3.2	3.4	3.2
Boston.....	18.6	66.8	21.2
Bridgeport.....	2.5	3.3	2.7
Buffalo.....	8.7	15.4	8.7
Canton.....	1.5	1.6	1.5
Charleston.....	1.3	1.3	1.3
Charlotte.....	1.6	2.4	1.6
Chattanooga.....	1.2	1.8	1.2
Part: Georgia.....	.2	.2	.2
Part: Tennessee.....	1.0	1.6	1.0
Chicago.....	54.5	116.3	62.0
Part: Illinois.....	51.5	112.6	59.0
Part: Indiana.....	3.0	3.7	3.0
Cincinnati.....	7.1	9.8	7.1
Part: Kentucky.....	1.2	1.7	1.2
Part: Ohio.....	5.9	8.1	5.9
Cleveland.....	12.1	31.7	12.1
Colorado Springs.....	1.1	1.4	1.1
Columbia.....	1.3	1.9	1.3
Columbus.....	1.1	1.2	1.1
Part: Alabama.....	.1	.1	.1
Part: Georgia.....	1.0	1.0	1.0
Columbus.....	5.1	9.2	5.1
Corpus Christi.....	1.1	1.1	1.1
Dallas.....	7.0	27.9	7.0
*Davenport-Rock Island-M.....	1.5	1.5	1.5
Part: Illinois.....	.8	.8	.8
Part: Iowa.....	.6	.7	.6
Dayton.....	4.2	4.4	4.2
Denver.....	7.0	7.8	7.0
Des Moines.....	1.4	1.5	1.4
Detroit.....	29.8	34.1	29.8
El Paso.....	2.0	2.2	2.0
Flint.....	2.1	2.2	2.1
Fort Lauderdale-Hollywood.....	3.7	3.9	3.7
Fort Wayne.....	1.4	1.7	1.4
Fort Worth.....	3.4	3.5	3.4
Fresno.....	1.7	2.2	1.7
Grand Rapids.....	2.0	2.2	2.0
Harrisburg.....	1.5	1.6	1.5
Hartford.....	3.1	5.1	3.1
Honolulu.....	3.0	3.9	3.0
Houston.....	10.5	12.1	10.5
Indianapolis.....	4.4	5.8	4.4

FORMULA APPORTIONMENTS FOR FISCAL YEAR 1979

(In millions of dollars)

Urbanized area	Current legislation available for capital or operating	Proposed legislation	
		Total apportionment	Available for capital or operating
Jacksonville	\$2.6	\$3.2	\$2.6
Kansas City	6.0	6.5	6.0
Part: Kansas	2.0	2.1	2.0
Part: Missouri	4.0	4.4	4.0
Lansing	1.4		
Las Vegas	1.2	1.5	1.2
Lawrence-Haverhill	1.1	1.1	1.1
Part: Massachusetts	1.0	1.0	1.0
Part: New Hampshire	.1	.1	.1
Little Rock-North Little	1.2	4.2	1.2
Los Angeles-Long Beach	68.2	77.2	68.2
Louisville	4.9	6.5	4.9
Part: Indiana	.5	.5	.5
Part: Kentucky	4.4	6.0	4.4
Madison	1.3	1.9	1.3
Memphis	4.3	5.8	4.3
Part: Mississippi	.1	.1	.1
Part: Tennessee	4.3	5.8	4.3
Miami	9.3	12.4	9.3
Milwaukee	7.4	13.1	7.4
Minneapolis-St. Paul	9.5	12.1	9.5
Mobile	1.3	1.3	1.3
Nashville-Davidson	2.1	2.3	2.1
New Haven	2.2	3.6	2.4
New Orleans	7.8	19.6	7.8
Newport News-Hampton	1.4	1.5	1.4
New York	151.9	400.9	174.1
Part: New Jersey	30.4	72.3	37.4
Part: New York	121.5	328.6	136.7
Norfolk-Portsmouth	3.7	4.4	3.7
Oklahoma City	2.9	3.0	2.9
*Omaha	3.1	3.4	3.1
Part: Iowa	.3	.3	.3
Part: Nebraska	2.8	3.1	2.8
Orlando	1.7	1.8	1.7
Oxnard-Ventura-Thousand	1.3	1.5	1.3
Peoria	1.4	1.5	1.4
Philadelphia	33.0	161.5	46.1
Part: New Jersey	4.7	26.1	5.2
Part: Pennsylvania	28.3	135.4	40.9
Phoenix	4.7	5.5	4.7
Pittsburgh	11.5	40.3	11.6
Portland	5.1	7.7	5.1
Part: Oregon	4.7	7.3	4.7
Part: Washington	.4	.4	.4
Providence-Pawtucket-WA	5.1	5.3	5.1
Part: Massachusetts	.3	.4	.3
Part: Rhode Island	4.7	5.0	4.7
Richmond	2.5	3.5	2.5
Rochester	4.3	7.6	4.3
Rockford	1.3	1.7	1.3
Sacramento	3.7	4.2	3.7
Salt Lake City	2.8	3.2	2.8
San Antonio	5.1	9.9	5.1
San Bernardino-Riverside	3.0	4.1	3.0
San Diego	7.5	8.6	7.5
San Francisco-Oakland	22.0	51.9	22.4
San Jose	6.9	9.4	7.2
San Juan	8.6	16.1	8.6
Scranton	1.1	1.2	1.1
Seattle-Everett	7.6	9.6	7.6
Shreveport	1.3	2.2	1.3
South Bend	1.7	1.8	1.7
Part: Indiana	1.6	1.7	1.6
Part: Michigan	.1	.1	.1
Spokane	1.4	1.5	1.4
*Springfield-Chicopee-HO	2.8		
Part: Connecticut	.3		
Part: Massachusetts	2.5		
St. Louis	13.4	18.3	13.4
Part: Illinois	1.8	2.8	1.8
Part: Missouri	11.6	15.5	11.6
St. Petersburg	3.1	3.6	3.1
Syracuse	2.6	3.2	2.6
Tacoma	1.9	2.1	1.9
Tampa	2.2	2.3	2.2

FORMULA APPORTIONMENTS FOR FISCAL YEAR 1979—Continued

[In millions of dollars]

Urbanized area	Current legislation available for capital or operating	Proposed legislation	
		Total apportionment	Available for capital or operating
Toledo.....	\$3.0	\$3.2	\$3.0
Part: Michigan.....	.1	.1	.1
Part: Ohio.....	2.9	3.2	2.9
Trenton.....	2.0	2.3	2.0
Part: New Jersey.....	1.8	2.1	1.8
Part: Pennsylvania.....	.2	.2	.2
Tucson.....	1.8	2.0	1.8
Tulsa.....	2.0	2.1	2.0
*Washington.....	19.6	29.8	19.6
Part: Maryland.....	6.3	8.2	6.3
Part: District of Columbia.....	8.9	12.1	8.9
Part: Virginia.....	4.4	8.4	4.4
West Palm Beach.....	1.5	1.6	1.5
Wichita.....	1.8	4.3	1.8
Wilkes-Barre.....	1.3	1.5	1.3
Wilmington.....	2.4	2.5	2.4
Part: Delaware.....	2.3	2.4	2.3
Part: New Jersey.....	.1	.1	.1
Worcester.....	1.5	1.6	1.5
Youngstown-Warren.....	2.5	2.5	2.5
Alabama.....	2.8	2.9	2.8
Huntsville.....	.7	.7	.7
Montgomery.....	.8	.9	.8
Tuscaloosa.....	.4	.5	.4
Gadsden.....	.3	.3	.3
Florence.....	.3	.3	.3
Anniston.....	.3	.3	.3
Alaska.....	.6	.6	.6
Anchorage.....	.6	.6	.6
Arizona.....	.8	.9	.8
Arkansas.....	.3	.3	.3
Fort Smith.....	.4	.4	.4
Pine Bluff.....	.1	.1	.1
Texarkana.....	.1	.1	.1
California.....	6.2	6.9	6.2
Bakersfield.....	1.1	1.1	1.1
Stockton.....	1.0	1.3	1.0
Santa Barbara.....	.9	.9	.9
Modesto.....	.7	.7	.7
Seaside-Monterey.....	.6	.7	.6
Santa Rosa.....	.4	.5	.4
Santa Cruz.....	.4	.5	.4
Salinas.....	.4	.5	.4
Antioch-Pittsburgh.....	.3	.4	.3
Simi Valley.....	.3	.3	.3
Colorado.....	1.2	2.3	1.2
Pueblo.....	.7	1.3	.7
Boulder.....	.5	1.1	.5
Connecticut.....	5.3	7.6	6.3
Stamford.....	1.1	2.7	1.7
Waterbury.....	.9	1.1	1.0
New London-Norwich.....	.7	.7	.7
New Britain.....	.8	.9	.8
Norwalk.....	.6	.9	.8
Meriden.....	.5	.5	.5
Bristol.....	.4	.4	.4
Danbury.....	.3	.5	.4
Delaware.....			.0
District of Columbia.....			.0
Florida.....	4.8	5.0	4.8
Melbourne-Cocoa.....	.9	.9	.9
Sarasota-Bradenton.....	.9	.9	.9
Pensacola.....	1.0	1.0	1.0
Daytona Beach.....	.5	.6	.5
Tallahassee.....	.5	.5	.5
Gainesville.....	.4	.4	.4
Fort Myers.....	.3	.3	.3
Lakeland.....	.4	.4	.4
Georgia.....	2.8	3.9	2.8
Savannah.....	.9	1.7	.9
Augusta.....	.8	.8	.8
Macon.....	.7	.9	.7
Albany.....	.4	.4	.4
Hawaii.....			.0
Idaho.....	.5	.5	.5
Boise.....	.5	.5	.5

FORMULA APPORTIONMENTS FOR FISCAL YEAR 1979—Continued

[In millions of dollars]

Urbanized area	Current legislation available for capital or operating	Proposed legislation	
		Total apportionment	Available for capital or operating
Illinois.....	\$0.5	\$2.7	\$1.7
Joliet.....	.9	3.1	2.2
Springfield.....	.8	.9	.8
Champaign-Urbana.....	.8	.9	.8
Decatur.....	.6	.6	.6
Alton.....	.5	.5	.5
Bloomington-Normal.....	.5	.5	.5
Dubuque.....			.0
Indiana.....	3.0		
Evansville.....	.9	1.0	.9
Muncie.....	.6	.6	.6
Terre Haute.....	.5	1.4	.5
Anderson.....	.4	.4	.4
Lafayette-West Lafayette.....	.6		
Iowa.....	2.1	3.9	2.1
Cedar Rapids.....	.7	.8	.7
Waterloo.....	.6	1.8	.6
*Sioux City.....	.4	.6	.4
Dubuque.....	.4	.7	.4
Kansas.....	.8	.8	.8
Topeka.....	.8	.8	.8
*St. Joseph.....			.0
Kentucky.....	1.9	2.0	1.9
Huntington-Ashland.....	.3	.3	.3
Lexington.....	1.1	1.2	1.1
Clarksville.....	.1	.1	.1
Owensboro.....	.4	.4	.4
Louisiana.....	1.9	2.7	1.9
Monroe.....	.5	.5	.5
Lake Charles.....	.5	.5	.5
Lafayette.....	.5	1.2	.5
Alexandria.....	.4	.4	.4
Maine.....	.8	1.7	.8
Portland.....	.6	.6	.6
Lewiston-Auburn.....	.3	1.1	.3
Maryland.....			.0
Massachusetts.....	4.4		
Lowell.....	1.1		
Brockton.....	.9	.9	.9
*Fall River.....	.8	.8	.8
New Bedford.....	.9		
Fitchburg-Leominster.....	.4	.4	.4
Pittsfield.....	.3		
Michigan.....	4.9		
Ann Arbor.....	1.2		
Kalamazoo.....	.8		
Saginaw.....	1.0	1.0	1.0
Muskegon-Muskegon Heights.....	.6	.6	.6
Jackson.....	.4	.4	.4
Bay City.....	.5	.5	.5
Battle Creek.....	.4		
Minnesota.....	1.4		
Duluth-Superior.....	.5		
Fargo-Moorhead.....	.2	.2	.2
*LaCrosse.....			.0
Rochester.....	.4		
St. Cloud.....	.3	.3	.3
Mississippi.....	1.7	1.8	1.7
Jackson.....	1.1	1.1	1.1
Biloxi-Gulfport.....	.6	.7	.6
Missouri.....	1.3	2.4	1.3
Springfield.....	.6	.9	.6
*St. Joseph.....	.4	.5	.4
Columbia.....	.3	1.0	.3
Montana.....	.9	.9	.9
Billings.....	.4	.4	.4
Great Falls.....	.5	.5	.5
Nebraska.....	1.0	1.0	1.0
Lincoln.....	.9	1.0	.9
*Sioux City.....			.0
Nevada.....	.6	.6	.6
Reno.....	.6	.6	.6
New Hampshire.....	.8	.9	.8
Manchester.....	.5	.6	.5
Nashua.....	.3	.3	.3

FORMULA APPORTIONMENTS FOR FISCAL YEAR 1979—Continued

[In millions of dollars]

Urbanized area	Current legislation available for capital or operating	Proposed legislation	
		Total apportionment	Available for capital or operating
New Jersey	\$1.0		
Atlantic City	.7		
Vineland-Millville	.3		
New Mexico			.0
New York	3.1	\$3.3	\$3.1
Utica-Rome	1.0	1.1	1.0
Binghamton	1.1	1.1	1.1
Poughkeepsie	.5	.6	.6
Elmira	.5	.5	.5
North Carolina	5.8	6.7	5.8
Fayetteville	.9	.9	.9
Raleigh	.9	.9	.9
Greensboro	.9	.9	.9
Winston-Salem	.8	1.4	.8
Durham	.6	.6	.6
Gastonia	.5	.5	.5
High Point	.5	.4	.4
Asheville	.3	.3	.3
Burlington	.3	.3	.3
Wilmington	.4	.4	.4
North Dakota	.4	.4	.4
Fargo-Moorhead	.4	.4	.4
Ohio	3.6		
Lorain-Elyria	1.0		
Huntington-Ashland	.2	.2	.2
Springfield	.6	.6	.6
Wheeling	.2	.3	.2
Hamilton	.5		
Steubenville-Weirton	.3	.3	.3
Mansfield	.4	.4	.4
Lima	.4	.4	.4
Parkersburg			.0
Oklahoma	.5	.5	.5
Lawton	.5	.5	.5
Fort Smith			.0
Oregon	1.3	1.5	1.3
Eugene	.8	.9	.8
Salem	.5	.6	.5
Pennsylvania	5.5	6.3	5.5
Erie	1.2	1.3	1.2
Reading	1.2	1.3	1.2
York	.8	.8	.8
Lancaster	.7	.7	.7
Johnstown	.6	1.2	.6
Altoona	.6	.6	.6
Williamsport	.4	.4	.4
Puerto Rico	2.5		
Ponce	1.3		
Mayaguez	.7		
Caguas	.7		
Rhode Island	.1	.1	.1
*Fall River	.1	.1	.1
South Carolina	1.4	1.4	1.4
Greenville	.9	.9	.9
*Augusta	.1	.1	.1
Spartanburg	.4	.4	.4
South Dakota	.5	.5	.5
*South City			.0
Sioux Falls	.4	.5	.4
Tennessee	1.7	1.7	1.6
Knoxville	1.0	1.1	1.0
Kingsport	.3	.3	.3
Clarksville	.2	.2	.2
Texas	9.0	9.7	9.0
Lubbock	.8	1.3	8.8
Amarillo	.7	.7	.7
Waco	.6	.6	.6
Port Arthur	.6	.6	.6
Beaumont	.6	.6	.6
Wichita Falls	.5	.5	.5
McAllen-Pharr-Edinburg	.5	.5	.5
Abilene	.4	.4	.4
Texas City-La Marque	.4	.4	.4
Odessa	.5	.5	.5
Killeen	.4	.4	.4

FORMULA APPORTIONMENTS FOR FISCAL YEAR 1979—Continued

[In millions of dollars]

Urbanized area	Current legislation available for capital or operating	Proposed legislation	
		Total apportionment	Available for capital or operating
Texas—Continued			
Laredo.....	\$0.4	\$0.5	\$0.4
San Angelo.....	.3	.3	.3
Galveston.....	.4	.4	.4
Midland.....	.3	.3	.3
Tyler.....	.3	.3	.3
Texarkana.....	.2	.2	.2
Sherman-Denison.....	.3	.3	.3
Brownsville.....	.3	.4	.3
Bryan-College Station.....	.2	.2	.2
Harlingen-San Benito.....	.2	.2	.2
Utah.....	1.4	1.5	1.4
Ogden.....	.8	1.0	.8
Provo-Orem.....	.5	.5	.5
Virginia.....	.7	.7	.7
Roanoke.....	.9	.9	.9
Petersburg-Colonial Heights.....	.6	.6	.6
Lynchburg.....	.4	.4	.4
Kingsport.....			.0
Washington.....	.7	.7	.7
Richland-Kennewick.....	.3	.3	.3
Yakima.....	.4	.4	.4
West Virginia.....	2.4	2.6	2.4
Huntington-Ashland.....	.6	.6	.6
Charleston.....	.9	1.0	.9
Wheeling.....	.4	.4	.4
Steubenville-Weirton.....	.2	.2	.2
Parkersburg.....	.4	.4	.4
Wisconsin.....	3.9	4.5	3.9
Duluth-Superior.....	.1	.1	.1
Appleton.....	.9	.9	.9
Green Bay.....	.6	1.1	.6
Racine.....	.8	.9	.8
Kenosha.....	.7	.7	.7
*LaCrosse.....	.4	.4	.4
Oshkosh.....	.4	.4	.4

Mr. EDGAR. But, Mr. Secretary, is there not a flaw in the structure of the proposed formula in that it does not take into account age of track, age of rail cars, age of stations and, in fact, the formula simply is based solely on miles? If you take the San Francisco system that may have approximately 70 miles in a subway system, and a Philadelphia system that has a 22-mile subway system, and you do not factor in age or other conditions of size of stations, et cetera—

Secretary ADAMS. We do factor in age, and we will supply you with figures to show how this is done.

[The following was received for the record:]

[DOT submission for the record:]

We propose to age-weight fixed guideway route miles by multiplying each mile of fixed guideway that is less than twenty-five years old by its age and dividing by twenty five. Each fixed guideway mile 25 years old or older would count as one age-weighted mile. Each applicant would receive a portion of the 19% of the funds available under the new Section 5 calculated by the ratio of its age-weighted miles to the total number of age weighted miles.

$$(\text{Total } \$ 5 \text{ annual funds}) \times (0.19) \times \frac{\text{applicants age weighted miles}}{\text{Total age weighted miles}}$$

Secretary ADAMS. Now, if you are questioning the total amount of money, that is always going to be a problem. For example, in New

York City, we do about \$200 million a year in there and nobody in New York even seems to notice. That, to me, is a lot of money and yet I am not trying to tell you that we have enough to modernize that system.

Mr. EDGAR. Mr. Secretary, could you document the place in the formula that relates to age of railcars, age of track?

Secretary ADAMS. Yes. On page 83 of the bill—

Mr. EDGAR. Which bill are you looking at?

Secretary ADAMS. The bill that we proposed; the one that we gave you. Do you have a separate committee print, Mr. Counsel?

Mr. HOWARD. I believe that the pages may not be the same.

Secretary ADAMS. It is section 505(a)(1) (A)-(E), page 66 in your print.

Mr. HOWARD. That is the bill.

Secretary ADAMS. In the bill, yes. At the top of page 67, "weighted by a factor for age of such route miles, as determined by the Secretary."

Mr. EDGAR. Now, that is age of route-miles. What does that entail?

Secretary ADAMS. How many route-miles you have and how old they are.

Mr. EDGAR. Does that entail the number of stations?

Secretary ADAMS. It can.

Mr. EDGAR. Does it entail the age of those stations?

Secretary ADAMS. It can.

Mr. EDGAR. Does it entail the age of the railcars that are used?

Secretary ADAMS. No, that is a separate category.

Mr. EDGAR. Do you factor in the age of buses in that separate category, as well?

Secretary ADAMS. In the bus category, we weigh them by age and we rotate them on a 12-year basis, considering that 12 years is the life cycle of the average bus.

Mr. EDGAR. And what do you do in the rail replacement category?

Secretary ADAMS. We leave it to local areas to come in and apply, but the useful life of a railcar runs from 20 to 50 years depending upon how well they are built, originally.

Mr. EDGAR. Last year, UMTA requested each of the old rail cities to submit an estimate of costs of modernizing their systems over the next 10 years. Could you provide these responses to the committee for the record?

Secretary ADAMS. Yes.

[The following was received for the record:]

[DOT submission for the record:]

An informal survey to estimate the order of magnitude of the capital cost of modernizing the Nation's rail rapid, commuter rail and light rail transit systems was conducted by UMTA during the summer and fall of 1977. This effort was an outgrowth of expressions of interest in the subject by both the Legislative and Executive branches. Each of the cities that have rail systems was asked to estimate the cost in 1977 dollars of modernizing its rail facilities up to present-day standards. The resulting numbers, shown in the attached table, are gross estimates that do not represent the degree of accuracy that would be available from a detailed engineering study with more rigorous parameters.

MODERNIZATION ESTIMATES BY MODE AND AREA (OR STATE)

[In billions of 1977 dollars]

Urban area (or State)	Rail Rapid	Percent	Com- muter Rail	Percent	Light Rail	Percent	Total	Percent
New York.....	8.8	78	1.9	41			10.8	62
Chicago.....	1.1	10	.5	11			1.6	9
Philadelphia.....	.3	3	.5	11	.4	30	1.2	7
Boston.....	.3	3	.3	5	.1	11	.7	4
San Francisco.....					.2	18	.2	1
New Jersey.....	.6	6	1.1	24	.01	1	1.8	10
Connecticut.....			.3	7			.3	2
Cleveland.....	.1	1			.2	11	.2	1
Pittsburgh.....			.01	1	.4	29	.4	2
Total.....	11.2	100	4.6	100	1.3	100	17.2	100

¹ Figures do not add up to 100 pct due to rounding.

Mr. EDGAR. My review of the responses that you have received indicates that rail modernization needs over the next 10 years is approximately \$15 billion. Is that approximately what the costs are?

Secretary ADAMS. I think it is probably low. I understand New York alone might use about \$17 billion for what they would want to do.

Mr. EDGAR. And you still believe, given the fact that this will now be a formula that will spread out to all cities, that \$365 million is adequate for that kind of modernization need per year?

Secretary ADAMS. Just as we have pointed out in the highway area, there is no way that we can meet all of the needs that we have, Mr. Edgar, and I would not mislead you by saying that I think that it will. But the formula system is the fairest way we know to spread out the Federal money to the Nation. And then, as I indicated earlier, we maintain the discretionary section to try to assist the cities that have a major program underway.

Our purpose in this approach is not to injure any city but to improve the way we make the funds available out of the total amounts that we have to meet the problem.

Mr. HOWARD. Excuse me. The gentleman's time has expired, and we will return to him shortly. The gentleman from West Virginia, Mr. Rahall.

Mr. RAHALL. Thank you, Mr. Chairman. Mr. Secretary, I thank you for your testimony and your presentation this morning, and especially commend you for your excellent grasp of the subject matter and your knowledge, as has been demonstrated during your response to this committee's questions.

My first question is rather general in nature. You have brought out this morning the grouping of categories and the flexibility that is allowed State governments to make decisions under the bill that you have proposed. My question is the one major difference that you see that argues for the enactment of the administration position over the Howard bill that has been presented to this subcommittee. I know, in your testimony, you draw several similarities between the two bills, but I do not see the major difference mentioned and why you feel the administration bill should be enacted over the Howard bill.

Secretary ADAMS. In the first place, we reduced the number of categories to a much greater extent. Second, we do more in equaliz-

ing matching ratios than does the existing bill. The Howard bill does not do anything to change the planning area, and we have a very elaborate section on planning. The amounts that are involved are different, and if you wish, we will supply you, or whoever else on the committee who might want it, with the specific amount differences in each category.

We also, for the first time, match the highway and the public transportation recipients, and this is not done in the present bill. We are trying to deal with the same clientele in administering the two programs. When Mr. Cox and Mr. Page are dealing with a particular city or State government differentiations are made at population levels of 5,000 50,000, and 200,000. Our bill makes these divisions more uniform.

The urban formula program we propose is much different. It allows, through the flexibility that is provided, a greater ability for the local government to decide where they want to use their Federal funds. We have changed the operating formula system by making it simpler and saying you can use Federal funds to meet up to one-third of costs. The existing discretionary grant program has been reshaped into a formula and discretionary program, and the bill filed by the chairman leaves it as it is.

In the rural and small urban formula area, we have provided for a public transportation set-aside and, for the first time, for some type of operating assistance, and this was not in the bill as it was filed. As I say, the bills have great similarities, and many of the things that I am talking about are areas where we have gone farther than H.R. 8648 originally proposed. If you would like to have me break it down even further I will do so.

[The following was received for the record:]

COMPARISON OF MAJOR SUBSTANTIVE PROVISIONS OF H.R. 10578 WITH H.R. 8648

Program area	H.R. 10578	H.R. 8648
Planning-----	1. Consolidates FHWA and UMTA planning funds, with funds to be eligible for all transportation planning activities. Establishes same planning requirements for FHWA and UMTA programs. Requires Secretarial review of transportation plans and programs of areas over 1,000,000 population.	1. No change to existing law.
Interstate program-----	1. Apportionment formula based 50 pct on essential gaps, 50 pct on total system completion; funds apportioned on the basis of gaps to be used for gap projects; funds not so used to be reallocated to other States. 2. State may borrow from its following year's apportionment if it has obligated its current interstate apportionment. 3. Apportioned interstate funds available for 2 yr, thereafter available on a discretionary basis for ready-to-build projects. 4. Interstate substitute projects receive 50 pct Federal share. 5. Formula for interstate RRR adjusted to reflect vehicle miles traveled; Federal share 80 pct. 6. Interstate segments which have not completed EIS process or been withdrawn by Oct. 1, 1982, will be removed from system. Construction must begin on all segments by Oct. 1, 1986.	1. No change to existing law. 2. State which has obligated its current interstate apportionment may borrow from apportionments of other States which have not obligated current interstate apportionments. 3. No change to existing law. 4. No change to existing law. 5. No change to existing law. 6. All rural interstate segments and all essential gap urban interstate segments to be constructed. All nonessential urban interstate segments to be constructed unless withdrawn by July 1, 1979.

COMPARISON OF MAJOR SUBSTANTIVE PROVISIONS OF H.R. 10578 WITH H.R. 8648—Continued

Program area	H.R. 10578	H.R. 8648
Primary program.....	1. 7 categories consolidated into 1 primary category. 2. Federal share 80 pct. 3. 50 pct of primary funds transferable to urban and/or small urban and rural program. 4. No required expenditure for RRR.	1. No change to existing law. 2. Federal share 80 pct. 3. No change to existing law. 4. 36 pct of primary apportionment to be obligated for RRR.
Urban highway program.....	1. Formula program for areas of 50,000 or over, for use on all highway and capital transit projects; 5 programs consolidated into 1. 2. Federal share 80 pct. 3. 50 pct of urban funds transferable to primary and/or small urban rural program. 4. Designated recipient for urban highway funds in areas of 1,000,000 or more, selected by Governor and local officials.	1. No change to existing law. 2. Federal share 80 pct for Federal-aid urban projects. 3. No change to existing law. 4. No change to existing law.
Urban transit program.....	1. Revised formula program to provide funds for routine capital and operating needs; apportionment formula revised to reflect broadened use; 50 pct of transit funds eligible for use on highway projects. 2. Only funds equivalent to those apportioned on basis of population, population density and 60 pct of commuter rail factors may be used for operating expenses; Federal participation limited to of total $\frac{1}{2}$ operating costs. 3. Discretionary program reserved for major investment projects.	1. No change to existing law. 2. No change to existing law. 3. No change to existing law.
Small urban and rural program.....	1. Consolidated formula assistance program for transit and highway projects in areas below 50,000; nine highway categories consolidated; 10 pct of apportioned funds to be spent on transit projects. 2. Federal share 80 pct. 3. Transit operating expenses eligible for assistance; Federal participation not to exceed A of total operating costs. 4. Funded from highway trust fund, with reimbursement out of general fund for transit operating expense. 5. No required expenditures for RRR.	1. No change to existing law. 2. Federal share 80 pct for Federal aid-secondary projects. 3. Transit operating assistance in small urban and rural areas eligible for assistance. 4. No change to existing law. 5. 36 pct of secondary system apportionment must be obligated for RRR.
Safety program.....	1. 6 safety programs consolidated into single formula program.	1. Permanent traffic control signalization program established.
Bridge program.....	1. Expand program to include rehabilitation as well as replacement; 30 pct of funds available for off-systems bridges. 2. Federal share 80 pct.	1. No change to existing law. 2. Federal share 90 pct.

Mr. RAHALL. The Howard bill, under section 114, would increase the Federal share of construction costs on projects on the Appalachian Development Highway System to 90 percent. How would the administration bill treat this program?

Secretary ADAMS. We would increase it from 70 percent to 80 percent.

Mr. RAHALL. Eighty percent?

Secretary ADAMS. Yes. That was the recommendation of the Appalachian Regional Commission.

Mr. RAHALL. Referring to the essential gaps provision of the bill, you did mention earlier that you have already taken into consideration in the administration bill the estimates of moneys that would be involved in this area, so that there would be no increased pressure to

increase the overall ceiling. Are those estimates a part of the interstate gap study that you also referred to earlier?

Secretary ADAMS. Yes.

Mr. RAHALL. When other States have unused funds—and you stress the fact that these funds should be made available to other States that have projects ready to go that have already used their funds—are these funds—do they go into one general pot, so to speak, in order to determine which other States can use those unused funds?

Secretary ADAMS. Yes; and you could borrow from the next year. But if you are asking whether the State is going to lose its money for essential gaps, it does not. It comes back in later on in the stream.

Mr. RAHALL. A State can borrow from its next year's apportionment?

Secretary ADAMS. That is correct.

Mr. RAHALL. Are there any circumstances where they could borrow beyond the following fiscal year's apportionment?

Secretary ADAMS. Yes; they could get lapsed funds from the States that might be over and above their 1-year apportionment.

Mr. RAHALL. I want to refer now to the bridge replacement funds. You mentioned earlier—under bridge replacement and rehabilitation—that these funds were limited to bridges that are on the Federal aid system, and that these funds could not be transferred to other categories. Is that correct?

Secretary ADAMS. They cannot be transferred to other categories, but 30 percent can go to off-system bridges.

Mr. RAHALL. Thirty percent can go to off-system bridges?

Secretary ADAMS. Thirty percent.

Mr. RAHALL. Am I correct in the assumption, Mr. Secretary, that none of these funds can be used for toll-collecting facilities?

Secretary ADAMS. Generally, you cannot, but there are certain circumstances under which you can. I would rather supply that to you in writing so as to be absolutely accurate.

[The following was received for the record:]

[DOT submission for the record:]

Current legislation governing the use of Federal-aid highway program funds specifies that the Secretary may permit Federal participation in the construction of any toll bridge provided that: (1) tolls received in excess of operating and maintenance costs be applied to repayment to the State or other public authority for the costs of construction or acquisition; (2) no tolls shall be charged after the State or other public authority has been repayed; and (3) after the final date of repayment, the bridge shall be maintained and operated as a free bridge. Further, funds made available for use on toll bridges would be subject to the same legislative provisions which are applicable to funds used on free bridges. The proposed modifications to the bridge program would not change these technical requirements for the use of program funds on toll bridges.

Mr. RAHALL. One last question, Mr. Secretary. You referred briefly earlier to your coal transportation task report that I believe is due out very shortly. I refer to the letter that you wrote the chairman of this committee last summer, asking for a 6-month extension. Also, in that letter, you do draw reference to the President's call for increased coal production, the questions that this raises as far as our transportation policy, and program areas.

Representing a district as I do, which probably has within its geographical boundaries probably the largest deposits of coal of any congressional district in this Nation, this is an area that is of deep concern. I am wondering that once this report is due out, if there will be modifications in the administration proposal to reflect additional dollars, additional concerns for moving our coal over our highways—coal haul roads, so to speak—and moving this coal to the markets. Will there be additional recommendations or areas in this regard that the administration will address?

Secretary ADAMS. Yes; we expect to. I expect that report to be out Friday of this week, and it will be followed by a coal road study to indicate the specific places where such facilities might be needed.

Mr. RAHALL. Thank you very much, Mr. Chairman.

Mr. HOWARD. Thank you. Before we recognize the members of the committee who are not members of the subcommittee for questions and then begin round two, I have two points I would like to bring up; one of them continuing, one new.

The first one concerns the 55-mile-per-hour speed limit that has been established. We know that the Congress has probably never passed any bill that so directly saved more lives than the 55-mile-an-hour limit, other than our vote to cut off funds to Cambodia and Laos; in the long run, that may not have been as successful as we might have hoped.

We went, down through the years, with a saving of somewhere around 10,000 lives per year. We are talking anywhere from 18 to 22 percent of the total lives that had been lost prior to the enactment by the States of the 55-mile-per-hour limit; that is on all roads. If we were to try to get figures based on what the percentage of saving of lives was on only those roads that were affected by the 55-mile-an-hour limit—those which had higher speeds—we may be talking in the range of 50 to 70 percent of the lives.

We have seen, unfortunately, in the past few months that this figure of noncompliance is increasing; the number of accidents are increasing; the number of deaths increasing. We know that we did get down, on the Interstate System, from an average speed of 67 miles per hour to somewhere around 61 miles per hour. That, we understand is slowly increasing over the past few months.

We had the range of speed, from the slower automobiles to the higher speed vehicles—that range being narrowed, which was very important, because it meant there were few passing lanes being used, and changing lanes, which is a very dangerous thing. We know that the Department has been very strong in its activities on a promotional, informational, and educational basis on this.

We also know that there is a provision that States who do not comply may lose, not as in the case of the motorcycle helmet area, 10 percent, but 100 percent—all of their Federal money. We feel that the Congress is not going to stand for this unnecessary increase in the loss of lives. And we do understand that you have been considering this and may have some recommendations for improvement which will be very, very firm in the area of taking away 100 percent money, although we realize how difficult that would be to impose on some State, and yet to also provide that perhaps another amount of

funds could be deprived of a State which apparently is not that concerned about the lives of its own people.

I wonder if, very briefly, you could give us some ideas that you have—I know you have some—that might tell us how we might make this a more workable program so that we do not lose this great saving that has been in effect since this subcommittee, back in early 1974, first came out with legislation on the 55-mile-per-hour speed limit.

Secretary ADAMS. Mr. Chairman, we recommend two things in the legislation. You are absolutely correct that we have gone to many States and stated that if they were planning to change their law and raise the speed limit or were not going to enforce it, we would remove their highway money.

Mr. HOWARD. Such as an overt act of some sort by the State in having, like, a \$5 fine for speeding.

Secretary ADAMS. Right. And we have sent out telegrams, and Governors, in response to that, have vetoed bills, and legislative bodies have pulled back bills. So, we have pursued that.

Now, the point that you mention is the next step, a very difficult one, and that is to establish compliance standards. Ms. Claybrook had made recommendations to me, and we have included in the bill—

Mr. HOWARD. The safety bill?

Secretary ADAMS [continuing]. The safety bill, a set of proposals to get an 85-percent compliance standard. Now, we are not saying 85 percent compliance is all we want, but we have to have a method of addressing actual compliance. Second, we are putting money into the States which are set aside specifically for enforcement, to aid them in going out on the highways and enforcing the speed limit.

If the chairman would allow me, I would ask Ms. Claybrook to read the compliance section that we have included so that you will see specifically what we have recommended.

Ms. CLAYBROOK. In the safety bill, we are suggesting—and these dates might have to be changed, depending on the date of enactment of the legislation—that for the 12-month period ending September 30, 1978, if the date submitted by a State shows that the percentage of motor vehicles on the roads that is actually exceeding 55 miles per hour is greater than 70 percent, then the Secretary shall reduce the apportionment of their primary, urban, and rural Federal aid highway funds by up to 5 percent.

Mr. HOWARD. This is 70 percent of the vehicles riding on the roads in the State that are posted at 55?

Ms. CLAYBROOK. That is correct.

Mr. HOWARD. They cannot work in their city streets and things like that?

Ms. CLAYBROOK. That is correct.

Mr. HOWARD. I see. And they would lose what percent?

Ms. CLAYBROOK. They would lose up to 5 percent in that first year, and then in the second year—for the period ending September 30, 1979—they would have to have no more than 50 percent exceeding the 55 limit, or they could then again lose up to 5 percent of the Federal aid funds that we mentioned.

Mr. HOWARD. Now, this would be based on some acceptable observation and statistics taken on the highways that are posted for 55.

Ms. CLAYBROOK. That is right.

Mr. HOWARD. Which would involve more money.

Ms. CLAYBROOK. That is right. We would, under this bill, allocate up to 25 percent of the 402 funds for enforcement and other speed limit activities.

Mr. HOWARD. In the bill that many of our subcommittee members introduced, we did have, for compliance with the 55-mile-per-hour limit, to try to get a sensible program. We put in \$50 million. We asked you if you could come up with a good use for these funds in order to reach the goal that we want. When we started out, I have to admit, we were talking mainly about saving fuel, which has happened, but we had no idea of the tremendous impact there would be on saving lives.

Montana, I believe, has passed legislation which says that up to 70 miles an hour the maximum fine can be \$5, and the charge cannot be for speeding, on point systems, but for not complying with the State's energy conservation laws. That might possibly be considered an overt act of trying to subvert the intentions of the 55-mile-an-hour limit, and that might be—and I do not want to judge Montana particularly—but that might be a case where all the money could go.

But then also worked into that, you do have a program, with figures and percentages, that says we expect a certain effort to be successful; and if a State cannot meet this, and the first standard says that they will not lose anything the first year unless more than 70 percent of the vehicles checked are not complying, it would lose some and then go down to 50 percent, or thereabouts.

I just want to thank you and compliment you on the work you did in attempting to develop a reasonable way to continue saving lives on the highways. And we know that when we first put this out, it was a flatout thing during the energy emergency of 100 percent money gone, and I would imagine that there might be some people objecting and knocking on your door if we were to attempt the 100 percent.

Secretary ADAMS. There have been a number, Mr. Chairman, and in light of your comments at the opening of this hearing that we were going to be sitting and working with you and the Members and the staff as they are drawing up this, legislation we will show you all of the various formulas and give you the history and the background of what States have come in and where we have had to send telegrams. It is a very difficult struggle, and it may be that the precise percentages in the system that we have approved there are different than what you had originally suggested, but we will be there to work with you on it.

Mr. HOWARD. Well, I want to thank you. From what we have heard so far, it certainly gives us something very reasonable and effective that we might work with, because we want to be firm on this, and yet we also want to be fair and reasonable. I hope we will come out of the committee not only with the authority, but the necessary funds, so that we can reach this common goal that we have.

One other point which may not involve this bill, but may involve legislation that may come up sooner than this bill.

Last week when I was at home, I was watching television; I was watching an old World War II movie and they were transporting goods and materials during a battle, and there were pictures of jeeps and trucks and other vehicles under fire, riding down a roadway attempting to avoid huge bomb craters and holes in the road.

I left the room and unbeknown to me, someone turned the channel. When I came back I continued watching and had no idea, at first, that I was not still watching the World War II movie film; it was the same scene, but it was automobiles, on a news program, working their way down Connecticut Avenue during the past week, or so.

What I am getting to is the tremendous emergency that faces the Nation this winter concerning potholes, with the several thaws, flooding and washing away of roads and damage to intercity rail systems because of the weather we had. Actually, it is worse this year than last year, because if we remember the tremendous winter we had last year, we had one freeze that just went on and on and on, and one thaw. And we are, at the present time, in many parts of the country having several freezes and several thaws and it has gotten to the point where insurance companies are feeling that this is something beyond their commitment, and not taking care of the many vehicles that are damaged. We understand that tire companies are very hesitant on guarantees, and such things.

I know you cannot make a commitment as to what is on my mind, and on the minds of some of the Members of the committee, that perhaps, although we do not, in a big bill, want to get into just ordinary, general maintenance on the Federal level, or set any precedents on pothole filling and maintenance, but we feel that all around this country, north, south, east, and west, this is a tremendous problem at this time.

My thoughts are perhaps it might be necessary, and might be very much cost-saving in the long run, if an emergency winter relief program were to be enacted by the Congress which might involve expenditures of perhaps, out of the trust fund, something like \$100 million, or so, which might be allocated to the States for this particular problem, perhaps setting a date in the spring or early summer as to when the money might have to be used, because the problem is disastrous from what I can see in reports, not only on television here, but in newspapers from all over the country. And the Governors and Mayors of large cities are strapped for funds to meet this crisis.

I do not want to ask you whether or not you can support a bill at this time, because I know it has not been discussed by the administration. But if you or Mr. Cox or Mr. Page, or someone, might be able to tell me what your views are about the special winter situation on streets and roads around the country, I would appreciate it.

Secretary ADAMS. Mr. Cox?

Mr. Cox. Thank you, sir. Mr. Chairman, without going into an analysis of the level of need or the administration position, we certainly would have to say that we have experienced bad winters, two in a row. Many of the States had not recovered from last winter when we went into this one. The Chairman is correct, and I concur, that this winter is actually worse on the roads than last winter. I would also point out that in many States, we do not fully realize yet

what the damage level will be. For one thing, we still have not found the roadway. Second, the total damage level depends on the manner in which the snow leaves. If it leaves as the result of a warm rain, we can expect near 1937 level flooding in many of the States.

Mr. HOWARD. Thank you very much. I do not think we need to add anymore to it, unless Mr. Page has any idea of what this may have done in some trolley lines or transit because of the weather.

[No response.]

Mr. HOWARD. You will not touch it?

Mr. PAGE. No. [Laughter.]

Mr. HOWARD. We do not seek at this time recommendations as to what ought to be done about it. I think that we do know, but we just wanted to discuss with you the fact that we do seem to have a special kind of situation that may mean some special legislation in the very near future. We just wanted to ask, while you were here, those questions. And one other point: As I look to the right here, if we set a time for when the money must be used to make sure that it is a winter repair item, we do realize that there are some areas of the country where the end of winter and the thawing out process to see what the damage is is much later than in some other areas of the country, and we would certainly consider that.

I now recognize the gentleman from International Falls, Minn., Mr. Oberstar. [Laughter.]

Mr. OBERSTAR. As a matter of fact, Mr. Chairman, I was just on the phone to International Falls. They have been having winter their long before it discovered Washington, D.C., and we sympathize with your problem out here with potholes, but they are peanuts compared to the ones that we have in northern Minnesota; the whole roadway heaves up. And we would welcome a national program, started in Minnesota, on pothole and road repair, maintenance, and winter damage replacement, and so forth. We welcome your ideas, Mr. Secretary.

Secretary ADAMS. We would be most happy to listen to yours, Mr. Oberstar, on that. [Laughter.]

Mr. OBERSTAR. We could go back to the Old English system, you know, where the citizens went out and filled the potholes, themselves. That was a system that operated in Chisholm, my home town.

Secretary ADAMS. The Federal Highway Administration says that that is basically what we have now. [Laughter.]

Mr. OBERSTAR. We also do not have the same problem that you have alluding to and we have been witnessing elsewhere in the country on the 55-mile-an-hour speed limit. We have a Governor in Minnesota who goes out and does his own thing; he stops motorists on the highways exceeding the speed limit and has his State highway patrolmen write them out a ticket right there.

Secretary ADAMS. That is the basic way you enforce the 55-mile-an-hour system.

Mr. OBERSTAR. He enjoys doing it. [Laughter.]

Mr. HOWARD. Is that the Governor that has the two black eyes? [Laughter.]

Mr. OBERSTAR. Well, he has got a 95 percent name recognition in the State.

I noticed in following up on colleague Rahall's allusion to the coal problem and our energy transportation needs, which is a growing problem in transporting coal from the West, as these mile-long trains rumble through towns, we are having an increasing problem with railroad grade crossings, which was a problem before the energy situation. I notice no reference to that as a safety problem in the administration proposal.

Do you have any ideas about an approach to the need to eliminate dangerous railroad grade crossings?

Secretary ADAMS. We address that in the report that we expect to have out on Friday of this week. The basic problem that we have been facing there, Mr. Oberstar, is there is a division of opinion as to whether the railroads should be diverting around the town, in which case many citizens say, "We do not think public money should go in that; that should be a cost to the railroad itself."

We will have an analysis out, which you can examine, of how many of these situations we have and what the degree of severity is. Under current law we are putting grade crossing money into various parts of the country; each time, we get into a hassle as to what part of the costs should be from the highway program and what part for the railway. That is the present situation.

Mr. OBERSTAR. We have had a very successful demonstration project in my congressional district under legislation authorized about 4 years ago; separation of a grade crossing, a very dangerous one—in fact, a place where seven people were killed over a period of a few years. The project has been funded and major construction has been completed. There are still some aspects of it yet to be finished, but it has been opened to traffic; a situation where the town, in reliance upon assurances of new highways that would avoid the railroad grade crossing situation, built a new high school north of the grade crossing. So, you had 6,000 people crossing that railroad grade crossing everyday; that is, 3,000 school children going across it twice a day, with main line trains coming through that point at speeds up to 70 miles an hour.

In fact, the day that we had the ground-breaking, we almost witnessed an accident at that site, where the gate did not close and the schoolbus stopped inches from the rail and the train whooshed on through. But that project is being completed at a cost under the Federal funding; probably, you ought to take a look at that one and see how they did it. They did it for less than the cost estimates and finished it ahead of schedule.

Secretary ADAMS. We like to see that sort of success. We have had \$200 million in the safety improvement program for rail highway crossings, and anything that comes in as well as the project you mention. Mr. Oberstar, we certainly would like to look at.

Mr. OBERSTAR. You may be willing to invest more of those moneys where we do a better job of spending it?

Secretary ADAMS. Well, as I say, we have the program available. We try to do away with a lot of the administrative problems that I mentioned to you before that have plagued this program from its beginning.

Mr. OBERSTAR. One final point; I would not expect you to be knowledgeable on it, but I have discussed at great length with

Ms. Claybrook the national driver register upgrading which I have proposed in legislation I introduced last year. And Joan Claybrook has responded very favorably and positively and shown new interest in a dynamic approach to the problem, responding to my appeal and the appeal of others, and I just would like to commend her for her personal interest and response. And I would hope that the Department would be able to support some modifications that, together, we have discussed and which I hope to offer as an amendment to this legislation.

Secretary ADAMS. I am hopeful we will be able to do that, and we are trying to increase our computer capacity so we can do that.

Mr. OBERSTAR. Thank you, Mr. Chairman, for your indulgence and letting me participate in the questioning.

Mr. HOWARD. The gentleman from Michigan.

Mr. BONIOR. Thank you, Mr. Chairman. I also would like to thank you for letting me, not a Member of the subcommittee participate in this dialogue with the people from DOT.

Mr. Secretary, I would like to express my appreciation for the cooperation that I have had with you and with Mr. Page and Mr. Graves, and other people in the Department, whom I have worked with on the Southeastern Michigan Transportation Authority plan for the greater Detroit area. I have a number of questions, but given the fact that the hour is late and you are probably hungry, as well as the other people in this room, I will just ask a couple of questions now, and then submit additional questions to you. (See page ?).

In discussing the Detroit transportation problem with members of the Department of Transportation, I have basically gotten the commitment or answer from members of your staff—Mr. Page and yourself—that there is a commitment for roughly \$600 million.

Secretary ADAMS. That is correct.

Mr. BONIOR. Giving some this way and some that way, close to \$600 million; that is correct?

Secretary ADAMS. That is correct.

Mr. BONIOR. We are hearing stories in the Detroit press and some local Detroit figures of a figure of 1.2 and 1.3 billion commitment from the Federal Government.

Secretary ADAMS. That is not correct.

Mr. BONIOR. That is a very important point to understand in planning for the Detroit system.

The other question that I would like to ask now, and then send the others to you, regards the formula grant program, section 5, the 25.5 percent on population, weighted by a factor density; 19 percent on the guideway system; 5 percent on the commuter rail. The question I have is on the 25 percent to be divided through an allocation to be made annually by the Secretary for buses, and my question is, do you include in that 25 percent the Dial-a-Ride buses, also? Are we just talking about line haul buses, or are we talking about Dial-a-Ride buses and community transportation buses?

Secretary ADAMS. We are talking about Dial-a-Ride also, if operated by the authority.

Mr. BONIOR. Yes.

Secretary ADAMS. Now, as you are well aware—and there will be another day when this, I am sure, will have to be addressed—different parts of the Federal Government assist different kinds of programs. We are talking now about those that are operated by the local authorities.

Mr. BONIOR. Well, I thank you very much and I look forward to working with you in the coming year.

Secretary ADAMS. Thank you.

Mr. BONIOR. Thank you, Mr. Chairman.

[Subsequent to the hearing, the following additional questions were forwarded to the Secretary of Transportation by Congressman Bonior:]

ADDITIONAL QUESTIONS TO THE SECRETARY OF TRANSPORTATION POSED BY
CONGRESSMAN BONIOR

Question 1. Do you have a figure on how many buses you plan on replacing nationwide every year under the formula grant program? Also, how much of the formula money do you plan on spending for bus replacement annually?

Answer. Historically, between one-twelfth and one-fifteenth of the national standard coach bus fleet is replaced annually. The proposed formula ensures that a sufficient amount of funding will be available to replace all 12 year old buses in any particular fiscal year. The 12 year age was chosen since it represents the lower range of the average age for replacement among transit operators currently. We expect approximately 3,500 buses will be replaced in FY 1979, and we anticipate that about \$260 million will be spent during FY 1979 for this purpose.

Question 2. Would replacement of small buses used for dial-a-rides be included in the calculations of bus replacement and bus seat miles under the proposed formula?

Answer. Yes, the bus operations factor of the proposed formula will be based upon the number of 12 year old buses of all sizes used in mass transit services in an urbanized area as well as the most recent number of annual bus revenue seat miles (including small buses) in an urbanized area.

Question 3. The Department of Transportation in the City of Detroit and the Southeastern Michigan Transit Authority will be merging their bus systems under proposed transportation plans. Many of the city's buses and bus facilities are quite old and will need replacement soon after the merger. I am concerned that there will not be enough money in the formula grant to SEMTA to replace all of these buses when they need to be replaced. Since this would be an unusual situation, would SEMTA be able to apply for discretionary funds to replace some of these buses?

Answer. The proposed formula will take into account the number of 12 year old buses each year as the basis for apportioning funds attributable to bus replacement, and the Secretary retains flexibility in allocating 25% of the formula funds between the bus replacement and bus seat mile factors to ensure that sufficient funds to meet each year's bus replacement are apportioned. Therefore, we do expect that sufficient funding will be available in the Detroit urbanized area to accommodate the replacement of SEMTA buses as they reach the 12 year age, subject, of course, to the local programming of available funds for that purpose. The proposed legislation also includes a provision to earmark up to five percent of the formula funds in FY 1979 and FY 1980 for various "transition" projects, including the replacement of buses currently more than 12 years old. "Transition" funds would be made available to urbanized areas on a discretionary basis.

Question 4. Under the Administration's proposal, what will be the basis for the formulas for distributing planning assistance to State and local governments?

Answer. The consolidated planning fund would combine existing highway and transit planning programs into a single transportation planning program. Funds authorized to carry out this program would be made available to States and, in urbanized areas of over 1 million population, directly to metropolitan

planning organization (MPO's) designated by the Governor. Separate allocations would be made for: (1) statewide and (2) urbanized area planning.

We are in the process of examining alternative formulas which would apportion the funds to the appropriate recipients for urbanized planning and statewide planning. By allocating approximately 50 percent of the funds for statewide planning, and 40 to 45 percent for urbanized planning, we believe it is possible to apportion the respective funds in a fair and equitable manner, based upon a rational formula which will assure a reasonably equivalent amount available to States and urbanized areas and provide a predictable level of resources, an essential element in the planning process.

With respect to urbanized area planning, it is most likely the formula will be based upon population, which is a rational basis for transportation planning in the cities. An amount of planning resources per capita is predictable, efficient, and correlates highly with transportation needs in urbanized areas.

With respect to statewide planning, which includes small urban and rural areas as well as the coordination and technical assistance for urbanized areas, it is most likely that the formula will be based upon the pro rata share of the capital program funds apportioned to the States, including Federal-aid highway and Section 5 transit program funds. An amount of planning resources per capital funds is predictable, efficient, and correlates highly with transportation needs on a statewide basis.

It is also probably that the Secretary's discretionary planning fund (5 to 10 percent) may be used for special national studies as well as special needs in selected areas, such as planning efforts to address clean air issues.

We expect to seek widespread review and comment on these formulas through the regulations process.

Question 5. When would the requirement for the Secretary's approval of the transportation plans for cities of over 1 million take effect?

Answer. The requirements for transportation planning in urbanized areas and the conditions for the Secretary's approval of the larger urbanized area plans would not require major changes in current practices and, therefore, would take effect upon enactment of the legislation.

The new planning requirement for urbanized areas of over 1 million population enables the Secretary to review, at an early date and progressively during the planning process, the substantive transportation plans and short range improvement programs for these areas. Both are required in existing legislation, so that Secretarial review is the only new feature. Secretarial disapproval of an area's plan or program will not result in a loss of Federal funds, but it will serve as notice that the purposes for which Federal assistance is intended should be reassessed to be sure that other national and local goals are being furthered through the transportation program. By providing early notice, we expect a resulting acceleration of the planning-programming-project approval process, since questionable projects will not proceed only to be rejected at a later date.

Question 6(a). In approving these plans, one of the criteria listed is the transportation needs of the area. Will this analysis include needs of the elderly and other housebound citizens to get to facilities in their own communities through the use of dial-a-ride?

Answer. An essential element of the planning process aims at improving the mobility of the elderly and handicapped and other housebound citizens lacking access to private transportation. UMTA has issued regulations which require special efforts in the planning of facilities for the elderly and handicapped as well as reasonable progress in the implementation of projects to serve them. Dial-a-ride is one of several para-transit services that may be considered and used.

These planning requirements for service to elderly and handicapped persons are not limited to areas with a population of a million or more.

Question 6(b). Will the analysis and final approval of these transportation plans take into account the relative advantages of low capital options?

Answer. Both FHWA and UMTA have placed heavy emphasis on transportation systems management (TSM) activities aimed at increasing the people-carrying capacity of the existing transportation system. Low capital options are a major element of this approach. Each transportation plan is now required to consist of a TSM element and a long-range element, which are inte-

grated to serve the overall transportation needs of the community. The Secretary's review and approval will evaluate this aspect of the planning effort.

Question 7. What regulations would DOT establish in order to make sure that funds from the formula grant program would be used for transportation for the elderly and handicapped since the change in Section 16(b)? Could these funds still be given to nonprofit organizations to provide this service?

Answer. UMTA's commitment to providing transportation services for the elderly and handicapped population encompasses a number of current and anticipated programs including Elderly and Handicapped regulations, the Section 16(b)(1) and 16(b)(2) programs, and accessibility features of Transbus. UMTA's implementation of the Department of Health, Education and Welfare's section 504 Handicapped and Accessibility Guidelines will also figure prominently in the provision of improved transportation services for these users. The proposed formula grant program funds would be available to private nonprofit organizations for continuation of the Section 16(b)(2) program, and we plan to strongly encourage States and urbanized areas to continue their 16(b)(2) programs.

Question 8. Could urban areas over 200,000 directly receive some of the 1½% of Section 5 funds set aside for innovative technology without going through the state government?

Answer. The Secretary is authorized to make grants for innovative transit management and operation techniques directly to both States and local public bodies. If a local public body in an area over 200,000 applies for a grant, UMTA would solicit the views of the Governor to see if the State supported the project. UMTA would consider the views of the Governor before making any such grant, but the contractual relationship would be directly between UMTA and the area over 200,000.

Question 9. Would hovercraft transportation be considered innovative technology?

Answer. Our proposal permits grants "for the deployment of innovative techniques and methods in the management and operation of public transportation." A hovercraft operation would be eligible for a grant if it represented a new public transportation service. An application that proposed to substitute new hovercrafts for existing hovercrafts would not be innovative and would not be eligible for these funds. The Urban Mass Transportation Administration would have to review the applications on a case-by-case basis to see if the proposal were innovative.

To the extent that new hovercrafts included new technology features the costs of introducing that new technology into public transportation service would be eligible for the amended Section 3 discretionary grant program.

Question 10. Do any cities presently get an operating subsidy which amounts to more than 33 1/3% of the operating cost as proposed under the Section 5 maximum?

Question 11. Your summary states that many communities would not have 33 1/3% of the operating costs underwritten; what do you expect the average percentage of operating costs that will be underwritten to be? Also, could you furnish me with a list of the percentage of operating costs which will be underwritten for each of the largest 25 metropolitan areas?

Answer. In the large majority of urbanized areas, UMTA operating assistance currently represents less than one-third of total operating costs. An analysis of FY 1977 grants to the principal transit operator in all areas over one million population revealed no case in which more than one-third of total expenses are currently being subsidized with Federal funds. Among a sample of smaller areas, Federal funds did exceed one-third of expenses in somewhat more than 20 percent of the cities analyzed, although in every case the percentage in excess of one-third was nominal.

Nationwide, UMTA funds currently cover less than 20 percent of total operating expenses, and we do not anticipate that this percentage would change under the proposed legislation. The proposed formula is expected to replicate in each urbanized area the approximate amount of funding available for operating assistance under current legislation. Therefore, the percentage of total operating expenses covered with UMTA funds in the 25 largest areas shown in the attached table is not expected to change significantly under the new legislation.

Percentage of operating expenses covered with UMTA funds ¹

Urbanized area:	Percentage
New York-Northeastern New Jersey.....	6.4
Los Angeles-Long Beach.....	24.2
Chicago.....	11.5
Philadelphia.....	10.0
Detroit.....	29.6
San Francisco-Oakland.....	9.2
Boston.....	8.6
Washington, D.C.....	15.2
Cleveland.....	12.8
St. Louis.....	22.6
Pittsburgh.....	11.7
Minneapolis-St. Paul.....	20.6
Houston.....	26.7
Baltimore.....	17.8
Dallas.....	21.7
Milwaukee.....	10.7
Seattle-Everett.....	16.4
Miami.....	22.7
San Diego.....	26.0
Atlanta.....	10.3
Cincinnati.....	21.9
Kansas City.....	21.9
Buffalo.....	14.7
Denver.....	(²)
San Jose.....	27.0

¹ Based upon the fiscal year 1977 operating assistance grant to the principal mass transportation operator in each area.

² Did not apply for operating assistance.

Mr. HOWARD. The gentleman from California has one brief question.

Mr. CLAUSEN. Going back to an earlier discussion that we had, by eliminating the noninterstate categorical programs and permitting the 50 percent transferability between the primary urban and rural programs, what safeguard is there against an urban-dominated State legislature funneling most of the money into urban areas at the expense of the rural areas?

Secretary ADAMS. We have the discretion to not approve a transfer. I want to emphasize that this discretion must be used carefully only in situations like you mention, where there is really a gross abuse. We would not think of using the discretionary authority to dominate States and prohibit them from using the flexibility. But if you got into what I think you are describing—you are saving one area just takes all the money—then I think I would be called upon by the congressional delegation from that State and urged to exercise discretionary power. That is the only way I know to handle it, Mr. Clausen.

Mr. CLAUSEN. Well, as you know, we are going to be kind of watching that in terms of the legislation——

Secretary ADAMS. I am sure of that.

Mr. CLAUSEN [continuing]. Because, again, we are getting back to the question of systems completion. We just want to make sure that everyone is treated fairly.

Secretary ADAMS. That is why we retained the primary category and continue to have other basic categories. I understand the reason for categories and I do not criticize the fact that we have

had them in the past. But as this system matures, we have to move with the country's need and get down to the appropriate number of categories. And, of course, there is always the alternative that if we try this for 2 or 3 years and we have had some gross abuses, you will undoubtedly want to look at it again.

I think it will work and, as I say, I am willing to use that discretionary power if there is a gross abuse in the meantime.

Mr. CLAUSEN. Well, based upon discussions that we have had, the key word in all this is balance; everyone says "a balanced transportation system." And what we want to have is a balanced highway system between the urban and rural areas, hopefully, to minimize the kinds of migration patterns that have caused the problem in the first place.

On this question of discretion, as long as you are there, Brock, we know that we would have access and that we could communicate. You know, this is my eighth term now, Brock, and I have dealt with a few secretaries over the years, and their idea of discretion is a little bit different than maybe what yours and mine would be. We do not want to put you in that kind of a box; you know what I mean.

Secretary ADAMS. I understand.

Mr. HOWARD. I recognize the gentleman from Pennsylvania, Mr. Edgar.

Mr. EDGAR. Thank you, Mr. Chairman. Mr. Secretary, I would like to make an apology and point out that I made a mistake. Age of rail systems was not a factor in the previous drafts of the bill that were available to me. In my discussions earlier on with Dick Page, I pointed out the problem of age not being a factor. As I read your testimony today and saw your specific definition of the formula, age was not included. I am pleased to see this needed change in the bill, and I congratulate you.

Secretary ADAMS. We took your advice, Mr. Edgar.

Mr. EDGAR. I still have a problem. I respectfully ask you to consider whether even with the inclusion of age for the 10, or so, major metropolitan areas across the country, a formula is feasible for funding these systems. These systems vary not only by age and length of track, but condition of repair, and all of the other things that are in there.

In some cases, the amounts of money that I have seen for modernization are equal to, and in some cases, like New York City, exceed the kind of discretionary moneys that you are going to be asked to give for new starts.

Secretary ADAMS. I would hope you would reserve judgment on that, Mr. Edgar, until we supply you with the figures that show you how the formula would work. The information we have received from around the country is that the combination of the formula grant and discretionary grant, is desired by most cities and will enable them to so that they have and can establish their planning and implementation program.

We have tried to avoid hurting anyone, but as I said to you before, I am not trying to you that there is enough money in this bill or in any other one that would ever come up to solve all the prob-

lems as quickly as we would like to. But we are definitely trying to move forward.

Mr. EDGAR. I think your comment that most cities are probably with it and in most cases, that is the desired way to have a revenue-sharing type program out to the communities is appropriate.

Secretary ADAMS. That word always bothers me.

Mr. EDGAR. It just sounds like revenue-sharing—

Secretary ADAMS. I hope it is not.

Mr. EDGAR [continuing]. When you take \$1,735 million in modernization, bus acquisition, operating assistance, and commuter rail, and devise a formula to pass it back to the communities.

Secretary ADAMS. Well, one of the great complaints we hear around the Government, and I think it is less in the Department of Transportation than it may be elsewhere, is that there is too much—I hate to use the word, because it is overused—they call it red tape, but you can call it administrative delay or filling out forms or whatever you want. That comes with the greater detail of Federal administration. We have tried to strike a balance.

The chairman has indicated we are all going to be working on this at the same time, so that if we have sliced it wrong, we will go back and forth and try to make the slice fair. What we are trying to achieve, and we are doing this presently to the degree we can administratively with a lot of these systems, is going in with lines of credit, rather than individual projects. We are trying to build on the experience in the highway program where people know what their money is going to be and then move ahead to use it. That is its genesis.

Mr. EDGAR. I have no problem with that for most of the areas and most of the regions and in some cases, the major metropolitan areas. I just have the suspicion—and I will reserve judgment—that given the figures that I have seen for Boston, New York, Chicago, San Francisco, Philadelphia, and some of the major metropolitan systems, that it is going to be very difficult to provide for them with some specialized needs in a formula system.

You may be able to prove that your instincts are right and that that all can be factored in by formula. I am reserving my final judgment, but I have some question about those particular concerns. Let me move on, because I do not want to lobby you only on that point of modernization. I agree with you that we are not going to take a SEPTA system and want to duplicate it anywhere; that what we are interested in doing is improving that system, improving its management, improving its local funding base, improving its ability to have some new starts, and improving its ability to have modernization and bus acquisition.

I would like to ask how 1978 funding compares with the 1979 funding proposed in your bill. It has been indicated by the press and by some here in Congress that while we are at this new day of new flexibility, things are not going to be better. I am concerned, because as I read the funding figures down the line, there really is not a lot of additional money.

Let me be specific. Does the \$640 million figure for 1979's budget for new starts represent any new starts, other than the commitments that you have already made?

Secretary ADAMS. We do not have any new start projects in for funding now.

Mr. EDGAR. So, in fact, the new start figure of \$640 million is keeping the commitment you already have?

Secretary ADAMS. It is not a new start figure; it is the section 3 discretionary money figure. As you know, Mr. Edgar, we respond to the plans that come in from the local areas and to the program they propose. You will remember that as the commitments were made around the country by the prior administration, they said there will be no more. We took that moratorium off. We added \$100 million in funding, so that cities could come in with their plans. When you ask me whether or not there is a new start—like the Washington, D.C. system or the Atlanta system or the Buffalo system—the answer is no. But that does not mean that one cannot be put in as an application.

Mr. EDGAR. I want to clarify that question a little bit further. If I add up the totals of all the commitments that the Department of Transportation has made, I do not see a great deal of money, other than the commitments that you have already made, that would be available even if somebody came in with a new start.

Secretary ADAMS. The way the system works—and what we are trying to solidify with the 5-year authorization and the rolling 2-year appropriation, assuming we do not have some other kind of trust fund mechanism—is that these totals include certain programs that phase down, some that are completed, and others that come on line. We roll this out in front. It does not mean that new starts do not come on. It works like layers. You will have a commitment, and as you meet your commitment and that fixed amount goes down, a new commitment can come in. In addition, the figures go up, as you can see—640, 690, 740, 790—so there is a movement up in the total discretionary amount.

Mr. HOWARD. If the gentleman would yield, just to follow up on that point. To some degree new starts and extensions will be, for this period of time, extensions, unless there is some section 5 formula money, that may or may not be available. Then this is a partial question to the earlier question I had concerning New Jersey.

Secretary ADAMS. Section 5 money goes out, and as I answered to the gentleman from the Detroit area, we have commitment money set aside and their program is not on line yet. So, we take the total amounts of money and it is allocated out each year, as the projects come on line. It is the same kind of thing that happens in the Highway Trust Fund, where you may have an amount of money available but it is not all used, because all the projects do not get through the EIS, the State match, and everything else, in a particular year.

Mr. HOWARD. I think I am disappointed a little in the result of your answer.

Secretary ADAMS. Yes; but we are trying to make it better.

Mr. EDGAR. You may again disagree with me, but if I look at the actual figures—and you include the rail extensions and new starts for 1978—a comparable figure for 1978 would be \$670 million. Is that correct or incorrect?

Secretary ADAMS. Could I have that again, please?

Mr. EDGAR. For 1978, the actual money that we are spending in this fiscal year, that that figure is closer to \$670 million. What would be a comparable figure for 1978?

Secretary ADAMS. It is about \$685 million, including \$75 million for downtown people movers, for fiscal year 1978.

Mr. EDGAR. Fine. I am just trying to get a comparison of figures. So, it is actually less than 1978's figures.

How much money is included for downtown people movers in that \$640 million figure?

Secretary ADAMS. An estimate of \$50 million.

Mr. EDGAR. How many people movers will that build?

Secretary ADAMS. It is the same commitment as before. In other words, there was \$220 million committed to four cities; we have maintained that commitment. One city is debating whether they are going to have it or not; the mayor says no and the city council says yes. So we are not able to move on that at this point. But there was no change in the program—there may be a change in what people are saying and doing as they come to us, but there is no change in the Federal commitment.

Mr. EDGAR. If I can be permitted, Mr. Chairman, let me move to the category of bus acquisition. Again, comparing 1978 figures with 1979 figures for bus acquisition, I estimate in the figures that I was able to get, that we are spending in 1978 dollars about \$360 million for bus acquisition.

Secretary ADAMS. That is correct.

Mr. EDGAR. And you are estimating that in the formula that you are going to devise, you are going to spend \$434 million. Now, that may be wrong; I would appreciate it if you could clarify that. How much for bus acquisition in 1979?

Secretary ADAMS. That is in the bill as we have proposed it. There is that amount available, but it does not say that the cities will use it for those purposes. But, yes, that figure is available.

Mr. EDGAR. While it looks like an increase in bus acquisition money, the question that I have is: Will we really have any more new buses put on line because of that increased figure? Or does that figure not represent the move towards the trans-bus and the new technology that is needed in the transbus area?

Secretary ADAMS. Well, there is definitely a problem with meeting the elderly and handicapped requirements. The new buses that will come on line—not next year, but when they start to come on line—are going to be more expensive. At some point, you have a more expensive bus, so you get fewer in number, but that, as I say, does not happen next year.

Now, that is something the committee is going to have to address overall in the total picture, Mr. Chairman, of what you do about bus fleets and the requirements that the Congress is placing for other social purposes. It is a very difficult area. It goes to whether you can have an option or whether everything must be accessible to everyone. The transbus, because of its features, is more expensive.

Mr. EDGAR. I guess I would also respectfully request that you provide us some help with that question of the elderly and the handicapped.

Secretary ADAMS. We will give you any kind of figures, and so on, that you wish.

Mr. EDGAR. I was a little disappointed that in your overall transit bill there was not really a suggestion that we go back and take a second look at the elderly and handicapped issue in the legislation. I think I know what your answer is going to be in terms of mandating it, but it just seems to me that what we are really in need of is effective transportation. In new systems, we are in need of making sure they are accessible for the elderly and handicapped.

I am sure you know, Mr. Secretary—that some of our regulations are mandating that we install an elevator when we renovate a new subway station that an elderly or handicapped person can use to get on the subway system. But he cannot get off if the other 10, or 12, or 20 stations along the line are not mandated for full accessibility.

Secretary ADAMS. Under the mandate which has been issued, not only in the transit legislation, but in other legislation and in regulations that have been issued, we have to meet those qualifications on new construction.

Mr. Chairman, Mr. Cox wondered—a Governor is waiting in his office—if he might be excluded to go meet with him, and if Mr. Lamm might be able to stay in his place.

Mr. HOWARD. The testimony will be that much lessened by your absence—I thought he and Mr. Lamm both were leaving.

Secretary ADAMS. No.

Mr. HOWARD. Excuse me, Mr. Lamm. [Laughter.]

Mr. EDGAR. I would like to go back to Mr. Mineta's question on the commuter rail service, and get a clarification. You answered there is \$80 million for commuter rail assistance in the bill.

If I am not mistaken, there are two types of commuter rail assistance; one is some capital assistance, and the other is some operating assistance. I think that it might be helpful for the record if you would clarify exactly what you meant by that \$80 million figure.

Secretary ADAMS. The total amount is \$84 million; 60 percent can be used for operations, plus whatever additional amount they want to take out of their formula grant. So, in our opinion, over the 4-year period, there is more money available than there is under the present program.

Mr. EDGAR. But to clarify that, it is \$84 million, only 60 percent of which can be used for operating systems.

Secretary ADAMS. Correct.

Mr. EDGAR. Present operating assistance runs about \$45 million; the authority was about \$50 million. Sixty percent of that \$84 million is what?

Secretary ADAMS. The amount was \$30 million; it was increased to \$45 million, with the specification that it be used for deferred maintenance, so that the figure that we had, operationswise, has been \$30 million. Now, if you would like us to supply a breakdown, we would be most happy to do so, Mr. Edgar. I want on the public record, to be sure we are communicating on it.

Mr. EDGAR. I think it would be a misdirection to believe that we are putting into this formula enough moneys to equal what opera-

tors receive presently under section 17 and/or 18 funding. I think, under your able leadership here, you have wrapped it in and put it into a formula. It is a slight increase in funding, but because of the formula nature of it, it means that areas like Philadelphia, New Jersey, and some of the other systems that are now receiving funds under sections 17 and 18 are going to get a smaller piece of that pie than they receive in fiscal 1978.

Secretary ADAMS. Mr. Edgar, the sections 17 and 18 money—and there was no section 18 money, because it was never appropriated—was for a temporary program for 2 years. We have wrapped it in, made it a 4-year commitment, and increased the amount of money. I think that is a good faith effort. I am not trying to say to you that it is all anybody needs, but my original statement stands, which is that we have increased the funding and we have increased our commitment in that area. I think we have done what we can in this bill with it.

Mr. EDGAR. If you were to go into Philadelphia and make the statement that they should relax because we have increased the money for commuter rail, I think you would find a great deal of frustration. I realize the need to get the local community to come up and match commuter rail services.

Secretary ADAMS. I can assure you I will never go into Philadelphia and say to them that they should relax, that the Federal Government is going to solve their problem. I can promise you that, and if there is anything in the record that indicates that, I want to make it very clear right now that that is not my position.

I think that there are severe problems that have to be addressed, and as we work on this bill as the chairman has indicated, we will work these sections. I wanted you to understand that we were not harming the operation, but I do not want to give the impression that we have saved it.

Mr. EDGAR. My reason for being so particular about my questioning is that I think that we do have to do, as the chairman has suggested, balance our transportation priorities. That does not mean either accentuating only public transit or only highways, but finding what best mode of transportation exists in the country.

I think we are at a historic moment—you call it an important day for transportation—in that rural and urban people are saying:

Together, we have got to develop a transportation policy that works, where we provide rural areas with not only highways, but public transit needs, and we provide urban areas with highways and public transit needs, and we begin to do with as much flexibility and reduction of redtape as possible.

However, after saying that, I think it is going to be difficult for some of us to support the administration's transportation bill. This bill calls for some major policy changes, some of which are good and some of which I have some question with, without an adequate amount of funding sensitive to our energy conservation and urban policy needs. We are finally, after a period of years, taking public transit seriously. We are finally taking highway needs seriously.

We are finally taking bridge needs seriously; and we are, in fact, going to make a major commitment to transportation.

I think that it was quite inappropriate for the administration to have an urban policy draft policy that said nothing about transportation, or very little.

Secretary ADAMS. I shared that view.

Mr. EDGAR. I was pleased that they sent that back.

Secretary ADAMS. That is why it went back.

Mr. EDGAR. I was also concerned that the energy statement that the President made in April of last year included nothing about the need for improved transportation. When you are talking about gas guzzling automobiles, you also need to talk about some alternative options. I think that there are some energy savings in van pooling and car-pooling and public transit.

I think there would be energy waste if we allow the New York, Philadelphia, Boston, or Chicago area transit systems to deteriorate. I know there is a giant vise in the loop in Chicago that is holding that system together. I know that in New York City, given the figures that they have, in order to keep their system alive for the next 10 years, they are going to need massive amounts of money. The modernization levels that you suggest in your bill could be eaten up by that one system alone, and you and I recognize that.

I hope that the administration, while they have been articulate in trying to get a reduction of categories and a more flexible system, would also recognize that in the year 1978, 1979, and 1980, as we begin to build a transportation policy, we need to make the financial investment, as well. Whether that comes as part of our urban policy or as part of our transportation policy, I do not think that it necessarily matters, as long as you have some control over it.

But I would say we are looking at about \$1 billion too little in the public transit area; maybe not for 1979 funding, but I think if we look at some of the needs that we have analyzed over the last year, the figure levels that you have provided are woefully inadequate to provide a balanced transportation network.

I apologize, Mr. Chairman, for taking so long, but I feel strongly about this particular concern.

Mr. HOWARD. Thank you, Mr. Edgar. We now bring to a close not 1 year, but 3 years of public hearings on the future of surface transportation in this country. I know of no subcommittee, its membership or its staff, which has been so diligent and so open in attempting to hear all sides of all issues, and anxious to get the views of groups and individual people throughout the country in helping to develop this system. I want to thank now the members of the subcommittee and the staff for their work thus far. We have not yet completed it.

Mr. Secretary, we in Public Works, and on this subcommittee, are very grateful that we do have an agency downtown, such as yours, to work with. I think that it has been one of the most productive relationships involving any area of responsibility for the Congress. We would like to state to the public that the subcommittee and its

staff members are going to be working to put together, over the next few weeks, this comprehensive surface transportation policy and program for the nation, and we would like to hear from you as to any last-minute views you might have as we develop this legislation.

Mr. Secretary, as in the recent past, we will certainly be continuing to work with you and with your people in putting together this program. The testimony you have given has been tremendous. We are very happy that on the House side there is one subcommittee that you can come to with the entire program. And we are grateful, and I am sure the media and everyone else is, that we were able to provide the forum here today for you to be able to explain your Administration's proposals in surface transportation. It is going to be helpful to all of us. We look forward to working with you in the future.

We have had you on this firing line for almost 5 hours of strain, including the picture-taking time earlier this morning. And now the Members of Congress are about to begin our legislative day, which will be a long one. We appreciate your efforts here and I want to let you know that the subcommittee has caucused and voted to give you and all of your assistants the rest of the day off, if you wish. [Laughter.]

Mr. HOWARD. Before we adjourn the hearings, we would like, Mr. Secretary, to know if you have any final words of benediction.

Secretary ADAMS. Thank you, Mr. Chairman. I just want to express my appreciation and that of all of my colleagues for the enormous amount of time that you have taken today and that the staff has taken in working in the past months on this. This bill is a product of many, many peoples' deliberations. I look forward to working personally with you, Mr. Chairman, on this, and the members of our staff look forward to working with your staff and with the individual members as you move through the markup. We want to help in every way we can, so that we can come out with a single bill that will meet the Nation's problems.

Mr. HOWARD. Thank you, Mr. Secretary. The record will be left open for one week for comments by anyone concerned. The subcommittee stands adjourned.

[Whereupon, at 2:45 p.m., the hearing was adjourned.]

[The following were received for the record:]

ADDITIONAL QUESTIONS SUBMITTED TO THE SECRETARY OF TRANSPORTATION
BY CONGRESSMEN HARSHA, SHUSTER, CLEVELAND, AND CLAUSEN

I. FUNDING

Question 1. How do the funding levels in H.R. 10578 compare to the funding levels originally proposed by DOT in its submission to OMB?

Answer. The attached tables compare FHWA and UMTA budget requests to DOT, DOT's budget request to OMB, and the President's budget, both under current law and under the Administration's legislative proposal.

FEDERAL HIGHWAY ADMINISTRATION FISCAL YEAR 1979 BUDGET EVOLUTION

[Obligations in millions]

Appropriation	FHWA request	DOT request	President's budget	Proposed legislation
3109 Motor carrier safety	15.3	15.0	13.4	13.4
3200 Highway beautification	23.2	23.2	¹ 23.2	(¹)
3300 Darien Gap Highway	46.4	18.9	20.0	20.0
3400 Territorial highways	5.6	5.6	¹ 5.6	(¹)
3510 Rail-railroad highway crossings	2.9	-----	11.4	11.4
3520 Rail crossing demonstration project (NEC)	58.0	2.7	(²)	(²)
3600 Off-system railway-highway crossings	65.0	65.0	30.0	30.0
3700 Great River Road	50.0	50.0	50.0	50.0
3800 Alaska Highway	38.8	38.8	-----	-----
3900 Off-system roads	-----	-----	-----	-----
4000 Highways crossing Federal project	20.0	16.0	16.0	16.0
4100 Federal-aid highways	7,578.8	² 7,578.8	² 7,578.8	7,800.0
4209 Limitation on general operating expenses	(178.1)	(173.6)	(173.6)	(173.6)
4300 H.R.S.G. (402)	40.0	28.0	¹ 28.0	(¹)
4400 Baltimore-Washington Parkway	2.0	-----	2.1	2.1
4500 Project acceleration demonstration	10.0	-----	-----	-----
4600 Highway safety R. & D. (403)	10.0	10.0	9.0	9.0
4700 Overseas highway	25.0	25.0	17.0	17.0
4800 Right-of-way revolving fund	-----	-----	-----	-----
4900 Safer off-systems roads	165.0	165.0	70.0	70.0
9100 Traffic control signal, demonstration	-----	-----	-----	-----
9200 Intermodal urban demonstration	-----	-----	-----	-----
9300 Highland scenic study	-----	-----	-----	-----
9400 Access to lakes	8.1	-----	10.4	10.4
Miscellaneous items	7.2	7.2	14.9	14.9
Total obligations	8,171.3	8,049.2	7,899.8	8,064.2
Total B.A.	7,691.7	7,545.2	3,744.0	7,890.3
Total outlays	7,591.0	7,325.0	7,564.6	7,564.6

¹ Included in the Federal-aid highways account.² Included in \$455,000,000 NEC budget request in Federal Road Administration budget.³ \$7,545+\$33.8 emergency relief carryover balance (estimate).

URBAN MASS TRANSPORTATION ADMINISTRATION FISCAL YEAR 1979 BUDGET EVOLUTION

[Obligations in millions]

	Fiscal year 1978	UMTA request	DOT request	Fiscal year 1979 budget	Proposed legislation
Sec. 3	¹ \$1,375	¹ \$1,660	¹ \$1,875	¹ \$1,375	\$627
New starts/extensions	610	700	525	525	527
Major bus	54	40	40	40	40
DPM	75	90	75	75	50
Rail modernization	320	405	360	360	-----
Bus	316	425	425	375	-----
Emergency	-----	-----	-----	-----	10
Urban initiative	-----	-----	450	-----	-----
Sec. 5	775	850	850	850	1,700
Sec. 5/sec. 17/18	-----	-----	-----	-----	905
Capital (bus/rail modernization)	-----	-----	-----	-----	770
Demos	-----	-----	-----	-----	25
Planning	55	70	60	65	² 48
Interstate transfers (transit only)	³ 370	³ 476	³ 400	³ 400	³ 400
R.D. & D.	70	110	76	71	-----
Administration	20	30	24	21	⁴ 90
Total	2,665	3,196	3,285	2,772	2,865

¹ Excludes \$25,000,000 for rural program to permit comparability with legislative program.² Represents a 2 pct takedown from secs. 3 and 5.³ Excludes funds for Metro for comparability with fiscal year 1979 budget.⁴ Includes administration and R. D. & D. expenses.

Question 2. When H.R. 8648 was introduced it was coupled with Chairman Howard's energy tax amendment to increase the gasoline tax by 5 cents per gallon, with the understanding that the additional revenue was required to support the increased funding levels in H.R. 8648. You supported it. Do you support such funding levels now and, if so, do you still support a gasoline tax increase.

Answer. The funding levels proposed in our legislation are those which can be sustained by anticipated revenues. The attached chart shows projected Highway Trust Fund revenues through FY 1983. Any increase in program level would require additional revenues. Under current circumstances, the revenues to support higher funding levels than we have proposed are simply not available.

I did support Chairman Howard's energy tax amendment to increase the gasoline tax by 5 cents per gallon and apply the new revenues to transportation purposes. I did not, however, specifically endorse H.R. 8648.

Projected Highway Trust Fund Revenues

[In millions of dollars]

Cash on hand end of fiscal year 1979:

Balance Sept. 30, 1977.....	\$10.2
Fiscal year 1978 estimate.....	17.1
Fiscal year 1979 estimate.....	17.4
Interest.....	1.3

Total..... 26.0

Commitments through fiscal year 1979 (interstate) and fiscal year 1978 (noninterstate)..... 24.9

Uncommitted balance..... 1.1

Projected income fiscal year 1980-83

Fiscal year 1980.....	\$7.1
Fiscal year 1981.....	7.3
Fiscal year 1982.....	7.3
Fiscal year 1983.....	7.4

Total..... 29.1

Interest..... 2.3

Uncommitted funds..... 1.1

Close-out funds..... .4

Total revenue..... 32.9

Proposed authorizations fiscal year 1979-83

Fiscal year 1979.....	\$4.3
Fiscal year 1980.....	7.8
Fiscal year 1981.....	8.2
Fiscal year 1982.....	8.2
Fiscal year 1983.....	3.5

Total..... 32.0

¹ Fiscal year 1979 budget estimates.

Question 3. Mr. Secretary, the American Public Transit Association has recommended an annual public transportation funding level ranging from \$3.5 billion in Fiscal 1979 to \$4.4 billion in Fiscal 1983. S. 208 as introduced by Senator Williams had an average annual funding level of \$4.5 billion and H.R.

8648, as introduced by Chairman Howard, myself, and other Members of this Subcommittee, contained an average funding level of \$4.2 billion. These bills, it would appear, more realistically address public transportation needs, particularly in light of the average annual capital and operating and maintenance needs identified in the 1974 *National Transportation Report* of over \$12 billion. Do you feel that the funding level for public transportation in your bill adequately addresses the public transportation needs of our Nation?

Answer. The proposed level of funding for the section 3 discretionary and section 5 formula apportionment programs continues these programs at the current level, with a modest increase for inflation.

The levels proposed provide an adequate level of assistance for the discretionary program and will permit the continued implementation of projects under or expected to be under sum certain contracts with UMTA. These major capital investment projects include on-going and prospective projects for fixed guideway new starts and extensions, major bus expansion, and the first group of downtown people mover demonstrations. The funding levels over five years are, as the President described in the 1979 proposed budget, "lean and tight".

The level of assistance for the section 5 program will continue to provide formula apportioned funds for operating assistance and will incorporate sufficient funding to also include routine capital assistance. This level continues the amounts already authorized by Congress for FY 1979 to support the current section 5 capital/operating assistance program, and exceeds the Congressional authorizations for the sections 17 and 18 commuter rail operating assistance programs. In addition, the proposed level accommodates urbanized area capital requirements for other bus and rail projects eligible under the new formula, based upon estimates of need and historical trends.

Two tables are attached which compare section 3, 5, 9, 17 and Interstate transfer program budget levels with levels proposed in the legislative submission. The first table compares FY 1978 budget levels approved by Congress with FY 1979 levels proposed in the legislation. The second table compares FY 1979 budget levels submitted as part of the President's budget with those proposed in the legislation. Excluding amounts for Interstate transfer substitute non-highway transit projects, the first table shows an increase of \$125 million in FY 1979 over FY 1978, while the second table shows an increase of \$95 million in the proposed FY 1979 legislative authorization over the FY 1979 budget submission.

TABLE I.—COMPARISON OF FISCAL YEAR 1978 BUDGET TO FISCAL YEAR 1979 LEGISLATIVE PROPOSAL

[In millions of dollars]

Fiscal year 1978 budget (appropriated)		Fiscal year 1979 legislative authorization request	
Sec. 3:		Sec. 3:	
Bus.....	1 316	Major bus.....	40
Major bus.....	54	New starts and extensions.....	527
		DPM.....	50
Total bus.....	370	Planning.....	13
Rail modernization.....	320	Emergency.....	10
New starts and extensions.....	610	Total sec. 3.....	640
DPM.....	75		
Total sec. 3.....	1, 375	Sec. 5:	
Sec. 5 (capital/operating).....	775	Capital (bus, rail modernization).....	775
Sec. 9 (planning).....	55	Capital/operating (secs. 5, 17, 18).....	900
Sec. 17.....	45	Planning and exemplary demonstrations.....	60
Subtotal for secs. 3, 5, 9, and 17.....	2, 250	Total sec. 5.....	1, 735
Interstate transfer (non-highway mass transit).....	645	Subtotal for sec. 3/5.....	2, 375
Total.....	2, 895	Interstate transfer.....	675
		Total.....	3, 050

¹ Excludes funds for nonurbanized areas.

² Takedown.

TABLE II.—COMPARISON OF FISCAL YEAR 1979 BUDGET SUBMISSION TO FISCAL YEAR 1979 LEGISLATIVE PROPOSAL

[In millions of dollars]

Fiscal year 1979 budget submission		Fiscal year 1979 legislative authorization request	
Sec. 3:		Sec. 3:	
Bus.....	1 375	Major bus.....	40
major bus.....	40	New starts and extensions.....	527
		DPM.....	50
Total bus.....	415	Planning.....	13
Rail modernization.....	360	Emergency.....	10
New starts and extensions.....	525	Total sec. 3.....	640
DPM.....	75		
Total sec. 3.....	1, 375	Sec. 5:	
Sec. 5 (capital/operating).....	850	Capital (bus, rail modernization).....	775
Sec. 9 (planning).....	55	Capital/operating (sec. 5, 17, 18).....	900
Sec. 17.....	0	Planning and exemplary demonstrations.....	60
		Total sec. 5.....	1, 735
Subtotal for secs. 3, 5, 9, and 17.....	2, 280	Subtotal for secs. 3 and 5.....	2, 375
Interstate transfer (non-highway mass transit).....	400	Interstate transfer (non-highway mass transit).....	675
Total.....	2, 680	Total.....	3, 050

¹ Excludes funds for nonurbanized areas.² Takedown.

Question 4. Mr. Secretary, the American Transportation Advisory Council has recommended an annual capital highway expenditures program of \$15.32 billion. H.R. 8648, as introduced by Chairman Howard, myself, and other members of this subcommittee, contained an average funding level of \$11½ billion. This bill, it would appear, more realistically addresses highway needs, particularly in light of the average annual capital needs identified in the 1977 *Highway Status Report* of over \$21 billion just to maintain 1975 conditions on all functional systems. Do you feel that the funding level for highways in your bill adequately addresses the highway needs of our Nation?

Answer. *The Status of the Nation's Highways: Conditions and Performance* reported an average annual capital cost (in 1975 dollars) through 1990 varying from \$14.0 to \$21.8 billion to maintain 1975 performance on the non-local highway systems. At least half of the capital improvement needs have traditionally been met by State and local jurisdictions and we expect this partnership to continue. An average annual Federal program in the range of \$7 to \$11 billion (depending on future travel characteristics and programing policies) would, therefore, maintain current performance levels through 1990. If, through periodic measurement of highway conditions and travel, we detect significant levels of deterioration in highway performance in the future, we will reevaluate the Federal highway program investment policies. We believe that, at this time, an annual program level of \$7.8 billion is sufficient to achieve the goal of maintaining system performance.

Question 5. Mr. Secretary, I would like to dispel the myth that no one reads environmental impact statements. On page 16 of the EIS on your bill, you indicate that the real size of the highway program in constant dollars would decrease substantially over the life of your bill. How can you justify this in terms of need, in light of the fact that we are already falling behind as was indicated in DOT's 1977 *Highway Status Report*?

Answer. The justification of the bill, and the declining real investment level proposed by it, is based on several considerations. First is our need to live within our means. The American motorist is in the process of adopting a conservation ethic regarding motor fuels. Motor vehicle fuel efficiency standards required by the Energy Policy and Conservation Act (EPCA) have already significantly improved the fuel efficiency of the Nation's motor vehicle fleet and will improve it further. The nationwide 55 m.p.h. maximum speed limit, to the extent that it is observed, further conserves our motor vehicle fuel usage. These are encouraging results from the standpoint of energy conservation, but

since Federal revenues from highway-user taxes are determined mainly by the 4-cents-per-gallon excise tax on gasoline, we are forced to be conservative in highway investments to stay within our means.

A second factor tending to justify a somewhat declining real investment in highways is our concentration on completing the Interstate System so that future investment can concentrate on the relatively less costly tasks of resurfacing, reconstruction, and rehabilitation of highways already in place.

Finally, even though real investment would decline somewhat, the proposed changes would allow program recipients greater flexibility in responding to their own special needs. By improving the efficiency with which funds are delivered to States and localities, the proposal could help assure that needed improvements would be made to the most essential parts of the transportation system and that the value of the Nation's investment in highways will not be eroded.

Question 6. Mr. Secretary, I understand that you have been a strong advocate of a mass transportation Trust Fund. Do you still support such a Trust Fund, and if so, why isn't it incorporated in the Administration's proposal?

Answer. I have advocated and still support a mass transportation trust fund. I believe that a stable and predictable revenue source, together with long-term authorizations, is necessary to provide the assurance and planning lead time required for large, costly, and complex transportation projects. State and local governments have a legitimate need for assurance of transportation assistance as a basis for gaining public support for important transportation projects. While the funding and authorization mechanisms for Federal highway and airport programs provide that kind of assurance, it is important that we recognize the same need in the transit area. It is very difficult for state and local governments to make objective assessments of intermodal transportation alternatives if funding assistance is more assured for one mode than for another.

I have advocated a trust fund because it would provide this type of assurance. The Senate passed version of the energy legislation, as an example, provides such a revenue source. I have not proposed a mass transportation trust fund at this time because of the absence of a clear cut revenue source. If such a revenue source were to become available, the Administration's proposed legislation could be easily meshed with it.

However, I believe that the approach which we have suggested for providing future authorizations and appropriations for transit goes a long way toward providing the assurances needed for major transit investments. This approach is a rolling five-year authorization cycle, in which appropriations are made at least one year in advance. Every two years an authorization level would be recommended for the following five years based on continuing replacement and modernization projects, construction schedules of projects under way, and estimates of new program needs. Each year an advance appropriation would be sought for the following year. This would provide a basis for advanced planning without unduly compromising Executive Branch or Congressional fiscal options.

Question 7. Mr. Secretary, a recent article in *Forbes* magazine on the Administration's highway proposals said: "The single-purpose Highway Trust Fund is as dead as the era that spawned it." Is this a fair interpretation of your proposed legislation.

Answer. In the Federal-Aid Highway Act of 1973, the Congress, recognizing the complexity of transportation needs in urbanized areas, amended the Federal Aid Urban Systems program to allow state and local officials the flexibility of using this Highway Trust funded account for public transit projects. Our proposed legislation continues this option, and in fact broadens the flexibility of state and local officials by allowing public transit monies, from the General Fund, to be used for urban highway projects. We are proposing to extend this same flexibility to small urban and rural areas by allowing Highway Trust Funds to be used for highway or transit capital projects.

Our legislative proposal is not a departure from the traditional use of the Highway Trust Fund. It continues the use of Highway Trust funds for highway purposes and in fact transfers highway programs such as the Off-System Program, previously funded from the General Fund, to the Trust Fund.

Question 8. What is the rationale for extending the Highway Trust Fund for a period of only 4 years, considering the fact that Trust fund taxes have been extended to 1985? Are we to expect more sweeping and far-reaching program changes at the end of the 4-year period such as a proposal for a consolidated Trust Fund of some sort?

Answer. We propose extension of the Trust for 4 years because that is the period necessary to cover our proposed authorizations and provides a reasonable period of stable funding for long-term investment decisions. This approach allows for both the Federal-aid highway program and the financial structure supporting it to be reviewed when new authorization legislation becomes necessary but does not necessarily imply that major changes will result from that review. It also ameliorates the allegation that Trust Fund programs are not adequately reviewed.

Question 9. Mr. Secretary, recently at the APTA convention you disagreed with the Congressional Budget Office report on Urban Transportation and Energy which, according to you, recommended against heavy rail systems because they didn't save energy. However, other interpretations of this study suggest that energy, as an element of decision-making, is really secondary. Costs, environmental factors and other needs are more important. If one uses energy as the sole, or primary element, then heavy rail is energy wasting. Could you tell the committee your views on this report?

Answer. The Department believes that the conclusion of the CBO report that "new rapid rail systems actually waste energy rather than save it" overstates the technical analysis, does not reflect many qualifications and caveats stated in the report, and does not take account of recent changes in Federal policy toward major rail transit investments.

The more valid and most significant conclusion to be derived from the analysis is that energy savings are dependent upon the specific design and context of an urban transportation facility and the kind of land use that will evolve in conjunction with that facility over time. This point is all the more critical when, as CBO points out, there are "numerous exceptions" to the typical data used in the analysis. Because of these exceptions, Federal investment in rail transit must be based, as it now is, upon individualized analysis of proposed rail segments. Only this kind of marginal analysis, not an averaged comparison, can indicate the energy-savings merit of new rail transit.

Another major deficiency in the CBO analysis, a drawback which CBO has acknowledged, is that long-term land use changes and increasing densities are not incorporated into the analysis. Yet we know that we can and must achieve more efficient urban land-use patterns if we are to live within our future energy resources. Not only will rail transit benefit from better land use through increased usage and reduced dependence on auto access, but it can also play a vital role as a change agent for more compact and coherent land use. In both effects, the potential of rail transit significantly exceeds the potential of any other mode.

II. ENERGY

Question 1. Mr. Secretary, if your legislation is enacted exactly as written what energy saving would result? What is the basis for this estimate?

Answer. The highway and mass transit programs are basically federally assisted State and local programs with the States and local governments making decisions on the type and programming of projects. The impact of this bill on energy consumption would vary depending on how the States and local governments choose to spend their transportation funds. For this reason, and because of the increased flexibility in the use of transportation funds allowed State and local governments, it is difficult to quantify energy impacts of the proposed bill. However, it is possible to determine qualitatively the direction of energy impacts.

The reduction of categories and increased flexibility in the use of Federal-aid highway funds would permit these funds to be targeted for projects which best serve the needs of State and local areas, thus improving the energy efficiency of the highway network. The continuation of the Interstate rehabilitation program, with the apportionment formula adjusted to focus on most heavily traveled segments, will prevent the energy waste which results from deteriorated highways. The expanded bridge rehabilitation and replacement program will reduce the need for inefficient traffic routings. Although completion of the

Interstate System would increase the traffic using the System, it would also relieve congestion and take traffic off roads of poorer quality, thereby saving energy. In addition, the provisions that would permit greater flexibility in transferring highway funds to public transportation projects in both urban and rural areas could significantly reduce transportation energy consumption, especially in urban areas.

The proposed change in public transportation program emphasis, particularly the shift toward formula grants which provide predictable funding, would improve the ability of program recipients to maintain and improve public transportation systems, to focus capital investment funds on projects that would provide the greatest benefit to urban areas and to make those systems more attractive to potential users. This change in program direction would help urban users to reduce traffic congestion and energy waste, as well as promoting greater mobility for residents of both urban and rural areas.

The proposed legislation makes the impact of transportation decisions on energy conservation objectives an integral part of the transportation planning process. Again it is not possible to quantify the results of this provision but we expect it to lead to energy conservation benefits.

Question 2. What is the basis for the common policy thread throughout your bill and the environmental impact statement that public transportation results in substantial energy savings?

Answer. We do not contend that public transportation is a cure-all to this country's energy problems. But public transportation does have a key role in providing flexible, energy efficient alternatives to meet the country's transportation needs.

When we think of energy use, we have to look at the total picture. An automobile involves substantial energy needs in its manufacture, its highway operations and its parking locations. While we can make the automobile more energy efficient, through improved fuel economy and by promoting car pooling, we do not currently have commercial alternatives to petroleum-using automobile engines.

Buses can carry more people or the same number of petroleum gallons that automobiles use. Electric transit vehicles allow us flexibility to use coal as a primary energy source. Transit vehicles are able to make consecutive trips in the rush hours which contrasts sharply with the twice-daily commuting pattern of an automobile. Electric transit vehicles, if properly maintained, can last for 40 years in revenue service and buses last for 12-15 years. These are all factors that must be considered in the energy equation.

We believe that public transportation does offer the opportunity for substantial energy savings. These savings can be realized if we improve transit services and gradually but steadily increase transit's share of urban travel. Substantial long-run energy savings can also be achieved if we coordinate transit investments, particularly rail systems, with local land use policy and growth. Through proper planning and coordination, we can curtail the need for lengthy trips and low-occupancy urban travel.

Question 3. In your statement, you say "We must redirect our highway and public transportation programs and gear them to an era of scarce dollars and costly energy, changing rural requirements and growing urban needs." I refer specifically to your focus on scarce dollars and costly energy. In light of studies which have been made, including one by the Congressional Budget Office, indicating that new heavy rail systems are not only enormously expensive but actually result in a loss of energy, how do you justify a program that continues to pump billion of "scarce" Federal dollars into new start rapid rail transit systems?

Answer. We do not agree with the conclusion of the CBO report that all rail systems waste energy. While some new rail systems may be marginal energy performers, some aspects of the CBO technical analysis are faulty. The most important of these are CBO's use of average comparisons for "typical" cities and CBO's neglect of long-term land use changes.

We believe that new rapid rail systems, if properly designed and complemented by land use and other transportation policies, can make a significant contribution to energy conservation. However the Department's support of continued careful investment in new start rapid rail systems is based on many other considerations including:

(a) Rail transit is a highly efficient carrier of large numbers of people, and in high-volume corridors it can be a cost effective transportation solution. Although the number of such corridors is limited, they can be found in the larger metropolitan centers which have compact, well-defined central business districts containing large concentrations of employment and retail activities.

(b) Rail transit has a unique capacity to influence patterns of development and foster more intensive uses of land. Many decades after streetcars went out of existence one can still trace their routes by the higher density corridors they created. Today, when supported by appropriate land use policies and development incentives, rail transit can still exert a strong shaping influence on patterns of urban growth.

(c) Rail transit can be a tool of central city revitalization. It makes the center more accessible, attracts downtown redevelopment, increases tax revenues, promotes a more attractive investment climate, and enables relief of surface congestion when combined with supportive transportation system management and automobile policies. For older urban centers rail transit can thus be part of a strategy of arresting center city decline and stimulating economic recovery.

III. INTERSTATE PROGRAM

Question 1. Your bill does not contain a separate authorization for the one-half of one percent minimum Interstate apportionment guaranteed each State. How would this be handled?

Answer. While we do not propose a separate authorization for this purpose, the minimum Interstate apportionment would continue and would be funded out of the regular Interstate authorization. Section 304 of the Administration's bill contains an amendment which would guarantee each State a minimum one-half of one percent. This would be accomplished by assigning that minimum to the States with cost-to-complete factors less than one-half of one percent. The remainder of the Interstate authorization would be apportioned to the other States in proportion to their share of the remaining cost to complete the System.

Question 2. There are requirements in this bill that no Interstate project may be approved unless its environmental impact statement is completed by 1982 and construction commences by 1986. Do these supersede the requirements for a unified and connected Interstate System. In other words, could an essential gap segment be chopped off the System?

Answer. Our proposal does not supersede or undermine the concept of a unified and connected Interstate System.

The great majority of Interstate gaps are located outside of urbanized areas and are not controversial. The October 1982 cutoff date provides more than four years' leadtime for completion of the EIS process, with another four years provided to begin construction. This provides more than sufficient time to meet these requirements for essential gaps, particularly given the various provisions of our proposal which will focus financial assistance on gap projects.

If the required dates were not met for an essential gap segment, it would be removed from the System. Given the proposed time table, however, any difficulties should become apparent well in advance of the deadline and actions can be taken to resolve them.

Question 3. Mr. Secretary, as presently drafted, could the provisions of your bill result in the dropping of an Interstate segment for reasons beyond the control of the States, such as nuisance litigation or the failure of Federal agencies to act in a timely fashion?

Answer. The intent is to establish a specific timetable for decisionmaking for the remaining Interstate work and to focus particular attention on those major steps that are critical to the process. Completion of the environmental impact statement (EIS) process is one of these. With a deadline having been established for completion of the EIS process, we expect States to move forward as rapidly as possible in this area so as to avoid last minute problems which could result in the removal of an Interstate segment. Should completion of the EIS process, in fact, be delayed beyond the deadline through no fault of the State, we would have to consider what steps to take. To provide a mechanism for this in advance of specific knowledge that these situations will occur, however, would tend to dilute the emphasis we feel must be placed on meeting these schedules.

Question 4. Mr. Secretary, could the provisions of your bill result in an Interstate segment being dropped because an environmental impact statement, approved by you prior to 1982, got tied up in Court past the deadline for commencement of construction?

Answer. The 1986 cutoff for construction was selected as a realistic date which could be achieved. We expect to monitor actual progress closely. If any adjustments need to be considered, this should be done on a case-by-case basis as conditions dictate and not as a general rule.

Question 5. Why would your bill permit non-transit substitutes for withdrawn Interstate highway segments to be off-system? This seems to shift the funds from the category of highest Federal interest to no discernible Federal interest.

Answer. Based on needs and traffic services, the vast majority of nontransit improvements for substituted Interstate highway segments will still occur on one of the other Federal-aid systems. Therefore, we expect the current Federal emphasis on Federal-aid systems to continue. The possibility does exist that a desirable project which would substantially improve transportation service could be located off one of these systems. In the interest of flexibility and optimum use of these funds, our proposal would permit assistance to such a project.

Question 6. In the summary of your bill, you state that as the Interstate System approaches completion, "our emphasis will shift to the provision of Federal aid to keep the System in good condition, thus preserving the Federal investment." By this, do you intend that the Federal Government should maintain the completed System through traditional maintenance activities, on a continuation of the 3-R program?

Answer. There is a strong Federal interest in preserving the efficiency and effectiveness of the Interstate System. We feel that its high level of service should be preserved under an expanded 3-R program. Routine maintenance should continue to be a State responsibility, but a national program for Interstate resurfacing, restoration, and rehabilitation would encourage more efficient and continuing protection of this substantial public investment.

Question 7. Although you state that the $\frac{1}{2}$ of 1% minimum will be continued under the Interstate program, your proposal does not contain a separate authorization for it. Thus, apportionments will be made on the basis of the full authorized level, but the $\frac{1}{2}$ of 1% states will have to be increased, resulting in a decrease in the apportionment of other States. How do you propose to do this without embarrassing some States by reducing their apportionment after it has already been made?

Answer. The apportionment for those States with cost-to-complete factors of less than one-half of 1 percent would be incorporated into the original calculation of each State's Interstate apportionment. This calculation would be made before any State's apportionment has been made available and there would be no subsequent withdrawal of funds. The recommended Interstate program level in the proposed legislation takes into consideration these additional needs. Apportionments which have already been made will not be affected.

Question 8. By increasing the Federal share on Interstate withdrawal projects to 90%, you state that you remove the disincentive to transfer. But in fact, are you not providing an incentive to transfer? Should not a withdrawal decision be made under only the most extraordinary circumstances, so that if in fact it is accompanied by a "penalty," we can be more assured that the Federal interest is being served. After all, the Interstate System was designed to meet national objectives, while substituted projects may not be so important.

Answer. Substitution can only be made for those routes considered non-essential to the completion of a unified and connected Interstate System, so the integrity of the Interstate Systems is maintained. The controversial Interstate sections subject to transfer are concentrated in densely populated areas which often have inadequate transportation service, which in turn results in substantial waste of economic and human resources. The substitute projects will support national transportation goals similar to those of the System—such as energy conservation, adequate transportation service, and economic development—but in a different manner.

IV. NONINTERSTATE HIGHWAYS

Question 1. We note on pages 2 and 3 of your testimony that a number of the provisions of your bill were incorporated at the suggestion of public officials at the State and local level. I assume that includes the elimination of the requirement that Federal-aid projects other than the Interstate and primary be on a Federal-aid system. This is advocated in terms of flexibility. Yet many of the States which have been arguing for flexibility say its one thing to consolidate categories but quite another to abandon the system concept. Please explain why it is included?

Answer. Federal-aid systems have traditionally included the more important State and local roads consistent with their functional classification. In other words, roads serving the greatest needs have received the highest priority in systems designation, as well as in project selection. We believe this practice will continue despite the removal of system designation as a condition of project approval.

Federal-aid programs below the Interstate and primary are designed to supplement State and local programs—not to substitute for local efforts. Accordingly Federal aid plays a relatively minor role, thereby according local officials the primary role in establishing priorities. System designation as a precondition to Federal assistance hinders rather than enhances the process. We believe that roads and streets now comprising the respective systems will continue to receive the majority of attention and Federal-aid funding. Moreover, granting emerging and sudden needs equal access to these funds will assure that Federal assistance to highway transportation is available where and when it is most needed.

Question 2. From a budgetary standpoint, how would you handle Trust Fund dollars used for public transit operating assistance in rural areas? What happens if the Appropriations Committee fails to appropriate the reimbursement? How will this affect the small urban and rural apportionments of States choosing to use this option?

Answer. The operating assistance provision is another mechanism to provide maximum flexibility to State and local decisionmakers in using Federal funds where they will do the most good. The apportionments received by the States will be based on the formula contained in the legislation and will not be affected by the decision of State and local officials to exercise the operating assistance option or by lack of General Fund reimbursement to the Trust Fund. As with other parts of the program, operating assistance will have contract authority, which means the States can incur obligations for operating assistance in advance of appropriations. Within the limits specified in the bill, State and local officials are free to choose how much of their Small Urban and Rural apportionments they want to commit to operating assistance with assurance that they will be reimbursed for the Federal share.

If Congress should not appropriate funds to reimburse the Trust Fund, the effect will be that the Trust Fund will have assumed the liability. This would be contradictory to the legislation, which would indicate that Congress intended for operating assistance to be financed from the General Fund, and we do not anticipate occurrence of such a situation.

We will be establishing accounting procedures to monitor the fraction of State apportionments being applied to operating assistance. As necessary, we will include in our budget a request for sums from the General Fund sufficient to reimburse the Trust Fund for operating assistance expenditures.

Question 3. It would appear that the consolidation of categories in your bill, and the elimination of Federal-aid designation below the Interstate and primary systems, would make State Governors and local officials more susceptible to political pressures, and also give them considerable political clout in selecting projects to be funded. Would you care to comment on this?

Answer. The flexibility we provide is intended to assist State and local officials in meeting local highway needs effectively. Removing systems designation as condition to Federal assistance enhances the prospects of quickly addressing critical local needs. We anticipate that even with this flexibility, most Federal assistance funds will continue to be used on roads on one of the designated systems, since they are the major carriers of traffic. We believe, however, that State and local officials—who are most knowledgeable as to the needs in their areas—should have the ability to decide among competing projects without being constrained by unnecessary Federal restrictions.

Question 4. By eliminating non-Interstate categorical programs and permitting 50-percent transferability between primary urban and rural programs, what safeguard is there against an urban-dominated State legislature funneling most of the money into urban areas at the expense of rural areas? I believe you'll agree that one of the purposes of the categorical grant program is to provide assurances that all classifications of roads and all areas of a State receive balanced assistance. Your proposal, it would seem, would do away with those assurances.

Answer. The proliferation of categories in the highway program, with their special eligibility restrictions, actually has led to imbalances among and within States rather than assuring balanced assistance. The expanded flexibility we are proposing is a direct response to the expressed preference of elected officials all over the Nation to have the opportunity to allocate available funds on the basis of local needs.

Only 50-percent of the primary, urban, and small urban and rural assistance programs can be transferred. That provides a minimum level of assured funding for each category. Further, the Secretary would be able to disapprove a proposed transfer if faced with a situation of clear abuse. In the main, however, it is the premise of this proposal that decisions as to allocation of these funds properly should be made at the State and local level.

Question 5. Looking at the total package, including highways, transit and safety construction, with the elimination of categories and increased transferability among programs, it would seem that nobody would know for sure where any of the money would be going * * * except you, as Secretary, with ultimate approval responsibilities. Do you agree, and is this what you envisioned in putting the package together? Do you think this kind of system adequately protects the Federal investment and Federal interest?

Answer. The consolidated planning program will insure a coordinated transportation planning/programming process. Federal review and approval of the programs of projects developed on the basis of that process will provide adequate protection for the Federal interest.

Furthermore, the proposed Interstate and primary programs, and the urban transit discretionary program, insure that the highway systems of national interest and the major transit investments will receive focused Federal attention. The bridge and safety programs, without transferability provisions, insure national commitments to these goals. The flexible programs—urban and small urban and rural—are oriented toward local needs, and it is not necessary to any Federal interest to know precisely where the money is going until those decisions are made.

Question 6. Mr. Secretary, your bill would allow small urban and rural funds to be spent on highway projects, public transit capital projects and public transit operating assistance. I also note that at least 10 percent must be spent on public transit, unless waived by the Secretary. Is there a ceiling on the amount that could be spent on public transit? In other words, could all of a State's apportionment be used for operating assistance for public transit? What safeguards are there to ensure a balanced transportation program?

Answer. A key objective of our legislative proposal is to give State and/or local officials, where appropriate, the resources, responsibility and authority to select projects that best respond to the particular needs of the areas. This is especially preferable in the case of assistance programs designed to assist local transportation projects.

State governments, with responsibility and capability to deal best with small urban and rural needs, are now in a position to make these decisions and evaluate project alternatives. In consultation with local officials in these areas, State officials can decide which highway and public transportation projects to be advanced with Federal funds. This process can be rational and equitable if the program is flexible enough to accommodate its operation on a statewide basis.

The precedent for funding transit from the Trust Fund was set in the 1973 Highway Act for the urban system program; thus it is not a new concept or policy. Only transit capital investments will be funded from the Trust Fund; the costs of operating assistance projects will be reimbursed from the General Fund. Small urban areas have had an ability to fund transit capital projects out of the Trust Fund since they were put under the urban systems category in 1973. The only change here affects the rural areas.

The current UMTA obligations for rural transportation projects are about \$20-25 million per year, in spite of considerably higher authorizations. By establishing a 10-percent minimum for each State for transit (unless waived), the level will average about \$82 million over the 4-year period of the bill. This should be more than adequate as we gain experience with rural public transportation.

Theoretically, all small urban and rural program funds could be used for public transportation, although not more than 1/3 of any transit system's total operating costs could be federally-funded. Realistically, given the demand for highway capital funds, we do not anticipate any disproportionate increase in rural and small urban public transportation investment.

Question 7. What type of projects would be eligible for operating assistance in small urban and rural areas? Intercity bus lines? School bus operators?

Answer. The primary focus of the rural transit program is to accommodate day-to-day travel needs related to employment, shopping, personal business, health care and social recreational trips. Most transit service is expected to be intra-community or intra-county, but some access to essential goods and services may require long distance trips between isolated small towns and rural areas and regional facilities perhaps 20-50 miles away. This might involve intercity bus lines. Educational trips will be primarily for vocational, college, and adult education students, with only back-up service for primary and secondary students.

Our policy is to make maximum feasible use of existing public and private transit operators who can satisfy community travel needs. The systems involved are likely to include conventional transit service in some of the largest rural communities and a mix of conventional and paratransit services in other less densely settled areas and small towns. The rural program will not provide basic school bus services.

Question 8. Has the Department made an estimate of public transit "needs"—both capital and operating—in small urban and rural areas?

Answer. A recent UMTA study concludes that the extent of the small urban and rural program will be a function of the state and local resources available. The magnitude of local resources, in turn, will be a function of federal funding, pointing out the importance of federal leadership. Total costs for the period FY 77-FY 85 ranged from a high level of \$700 million with considerable state and local subsidies, to a minimal level of \$150 million, reflecting low levels of state and local subsidies.

The program we have proposed, with 10 percent of a State's small urban and rural apportionment to be spent on transit projects and with a 33-1/3 percent cap on the Federal contribution to operating costs, will provide an average of about \$82 million in transit assistance per year for these areas, over the four-year period covered by the bill. We believe this is a prudent approach while we develop a better understanding of program potential in this area.

Question 9. Mr. Secretary, your proposed legislation allows small urban and rural funds to be spent on public transit operating assistance. This would be the first time that this type of Federal assistance would be available in these areas. Has DOT made an estimate of the demand for operating assistance?

Answer. UMTA recently conducted a study of the demand for operating assistance in small urban and rural areas, using the existing section 5 formula grant program—where the Federal share is 50 percent of net operating deficits—as the basis for calculating estimates. Estimates of operating subsidy demands for FY 77-85 range from a high of \$360 million, if significant state and local funding were available, to a low of \$71 million with minimal non-Federal subsidies.

Question 10. Mr. Secretary, the funding level for your small urban and rural program is about the same as FY 1978 funding for existing highway and transit programs in these areas. Yet your proposal would significantly increase the demand on these funds. Roads not presently on the Federal-aid system would now be eligible for funding. For the first time, funds could be used for operating subsidies for public transit. The demand for capital funds for public transit might well increase now that operating assistance is available. Won't this substantial increase in demand result in a substantial dilution of our efforts on the traditional Federal-aid systems, in small urban and rural areas such as the secondary road system?

FY 1978: Highway programs: \$694 (DOT estimate); public transit capital: \$84 (\$500 million set aside for a 6-year period); total: \$778.

FY 1979: Administration funding level: \$786.

Answer. The \$694 million figure for FY 1978 represents the total amount of funding now authorized for small urban and rural areas from a number of separate highway assistance categories, including safer off-system roads. On the transit side, although a total of \$500 million has been authorized for capital transit projects in these areas, funding requests have averaged \$20-25 million per year. The proposed \$786 million authorization for FY 1979 takes into account equivalent current demand and projected increased demand.

The consolidated assistance program we propose recognizes that small urban and rural areas, nationwide, have diverse needs. Some require acquisition of buses, some need highway improvements and some need funds to support ongoing transit operations. The transportation system in these areas is largely highway-based and highways can expect to receive the bulk of the assistance. We require a minimum of 10 percent expenditure on transit to insure that these needs are not overlooked. While we believe the flexibility to fund highway projects off the designated Federal-aid systems is important, we do not expect this to result in neglect of highways on those systems. Both the Federal-aid secondary and the Federal-aid urban systems were designated by State and local officials on the basis of their importance to the areas served and their traffic bearing capacity. These are, basically, the most important highways in these areas and are likely to continue to be given priority when State and local officials determine their funding priorities.

Question 11. DOT's 1977 Urban System Report recommended that Congress make no changes in the legislation affecting the urban system program and the transportation planning and programming processes. In light of this recommendation, how do you explain the sweeping changes in your bill?

Answer. In addition to recommending that no legislative changes be made at that time, the Urban System Study noted a general feeling that the flow of funds should be expedited and better understood at substate levels. The report also pointed out that principal cities and counties of larger urbanized areas are generally capable of processing projects regardless of complexity.

We were not prepared to recommend piecemeal changes to the Federal-aid program at that time. The present legislative proposal is, on the other hand, part of a comprehensive approach to the program. It represents an evolutionary step in our efforts to increase program flexibility for State and local officials and strengthen the role of local decisionmakers.

V. MASS TRANSIT

Question 1. Mr. Secretary, the new provision in your bill establishing ground-rules for the amount of section 5 funds which a locality can use for operating assistance are extremely complex. Would you please explain them and provide for the record analyses of how this would apply to various representative cities on the basis of past experience.

Answer. The attached table lists the estimated FY 1979 formula apportionments for each urbanized area based upon the data currently available.

Two limitations are proposed in the legislation which affect the use of formula funds for operating purposes: (1) Federal funds could not be used to cover more than one-third of eligible transit operating expenses, and (2) The amount of Federal funds used for operating assistance could not exceed the apportionment which is attributable to the population/density factor plus 60% of the commuter rail train mile factor of the proposed new Section 5 formula.

Together, these two proposed limitations permit the elimination of former Section 5 requirements regarding "Maintenance of Effort" (MOE) and the matching of UMTA operating assistance dollar for dollar with State and local subsidies. In addition, they permit the consolidation of three formerly separate, categorical programs for operating assistance provided under Sections 5, 17, and 18.

For each urbanized area, the attached table lists the amount which would be available in FY 1979 under the existing Section 5 legislation, the total amount which would be apportioned in that year under the proposed legislation, and the amount thereof which would be available for operating or capital assistance. (Any additional funds in the total apportionment will be available only for capital assistance). Thus the amount of each area's apportionment which is potentially available for operating assistance constitutes the basic

limitation on the use of formula funds for that purpose. A concurrent restriction is that formula funds cannot be used to cover more than one-third of total eligible transit operating expenses.

ESTIMATED URBAN MASS TRANSPORTATION SECTION 5 FISCAL YEAR 1979 FORMULA
APPORTIONMENTS TO URBANIZED AREAS AND STATES RESULTING FROM PROPOSED
DOT LEGISLATION AND UNDER EXISTING LEGISLATION

NOTES

1. New legislation proposes an authorization of \$1,735 million in FY 1979 for formula apportionment. Deducted from this are: 2% for planning; 1½% for innovative demonstrations. Thus the amount available for apportionment is \$1,675 million. In addition, 20% of the 25% bus factor (or 5% of the total) is set aside for discretionary transition grants. Thus, the total amount actually apportioned is \$1,590 million.

2. Amounts shown are based upon unaudited and unverified data submitted by each urbanized area to the Urban Mass Transportation Administration. To the extent that there are inaccuracies in the data due to differences in collection, interpretation, or presentation; or incomplete data have been submitted; final apportionments may change to reflect improved data.

3. Data have not been received from all urbanized areas. Adjustments to totals have been made to accommodate the expected apportionments to these areas. However, apportionments for these areas are not shown. In some cases, UMTA has made estimates of subapportionments in multistate urbanized areas. Such estimates are indicated by an asterisk.

4. The apportionments have been rounded to the nearest \$100,000. This reflects the accuracy of the data at this time. The final apportionments would be calculated to a larger number of decimal places.

5. Three entries are shown for each urbanized area: The first column shows the total amount which would be apportioned to the urbanized area in FY 1979 under the current formula program. This amount can be used either for eligible operating or for capital expenses. The next two columns show the formula apportionment under the proposed legislation. The first of these two columns shows the total amount apportioned to that area. This amount can be used for any eligible capital expense (bus or rail vehicle purchase, facilities construction or modernization, etc.). The second of the two columns is that amount out of the total apportionment which can be used either for eligible operating or for capital expense purposes.

6. Some of the data used in calculating the apportionments, such as the number of 12 year old buses, change from year to year. Therefore the amounts shown are for FY 1979 only, and cannot be extrapolated for future years.

FORMULA APPORTIONMENTS FOR FISCAL YEAR 1979

[In millions of dollars]

Urbanized area	Current legislation available for capital or operating	Proposed legislation	
		Total apportionment	Available for capital or operating
Akron.....	3.2	3.3	3.2
Albany-Schenectady-Troy.....	3.1	3.3	3.1
Albuquerque.....	1.7	1.8	1.7
Allentown-Bethlehem-East.....	2.5	2.6	2.5
Part: New Jersey.....	.2	.2	.2
Part: Pennsylvania.....	2.3	2.4	2.3
Atlanta.....	6.9	9.8	6.9
Aurora-Elgin.....	1.4	3.5	2.7
Austin.....	1.6	1.8	1.6
Baltimore.....	12.6	20.2	12.7
Baton Rouge.....	1.5	1.6	1.5
Birmingham.....	3.2	3.4	3.2
Boston.....	18.6	66.8	21.2
Bridgeport.....	2.5	3.3	2.7
Buffalo.....	8.7	15.4	8.7
Canton.....	1.5	1.6	1.5
Charleston.....	1.3	1.3	1.3
Charlotte.....	1.6	2.4	1.6

FORMULA APPORTIONMENTS FOR FISCAL YEAR 1979—Continued

[In millions of dollars]

Urbanized area	Current legislation available for capital or operating	Proposed legislation	
		Total apportionment	Available for capital or operating
Chattanooga.....	1.2	1.8	1.2
Part: Georgia.....	.2	.2	.2
Part: Tennessee.....	1.0	1.6	1.0
Chicago.....	54.5	116.3	62.0
Part: Illinois.....	51.5	112.6	59.0
Part: Indiana.....	3.0	3.7	3.0
Cincinnati.....	7.1	9.8	7.1
Part: Kentucky.....	1.2	1.7	1.2
Part: Ohio.....	5.9	8.1	5.9
Cleveland.....	12.1	31.7	12.1
Colorado Springs.....	1.1	1.4	1.1
Columbia.....	1.3	1.9	1.3
Columbus.....	1.1	1.2	1.1
Part: Alabama.....	.1	.1	.1
Part: Georgia.....	1.0	1.0	1.0
Columbus.....	5.1	9.2	5.1
Corpus Christi.....	1.1	1.1	1.1
Dallas.....	7.0	27.9	7.0
*Davenport-Rock Island-M.....	1.5	1.5	1.5
Part: Illinois.....	.8	.8	.8
Part: Iowa.....	.6	.7	.6
Dayton.....	4.2	4.4	4.2
Denver.....	7.0	7.8	7.0
Des Moines.....	1.4	1.5	1.4
Detroit.....	29.8	34.1	29.8
El Paso.....	2.0	2.2	2.0
Flint.....	2.1	3.9	3.7
Fort Lauderdale-Hollywood.....	3.7	1.7	1.4
Fort Wayne.....	1.4	3.5	3.4
Fort Worth.....	3.4	2.2	1.7
Fresno.....	1.7	2.2	1.7
Grand Rapids.....	2.0	1.6	1.5
Harrisburg.....	1.5	5.1	3.1
Hartford.....	3.1	3.9	3.0
Honolulu.....	3.0	12.1	10.5
Houston.....	10.5	5.8	4.4
Indianapolis.....	4.4	3.2	2.6
Jacksonville.....	2.6	6.5	6.0
Kansas City.....	6.0	2.1	2.0
Part: Kansas.....	2.0	4.4	4.0
Part: Missouri.....	4.0	1.4	1.2
Lansing.....	1.4	1.1	1.1
Las Vegas.....	1.2	1.1	1.1
Lawrence-Haverhill.....	1.1	1.0	1.0
Part: Massachusetts.....	1.0	.1	.1
Part: New Hampshire.....	.1	4.2	1.2
Little Rock-North Little.....	1.2	77.2	68.2
Los Angeles-Long Beach.....	68.2	6.5	4.9
Louisville.....	4.9	.5	.5
Part: Indiana.....	.5	6.0	4.4
Part: Kentucky.....	4.4	1.9	1.3
Madison.....	1.3	5.8	4.3
Memphis.....	4.3	.1	.1
Part: Mississippi.....	.1	5.8	4.3
Part: Tennessee.....	4.3	12.4	9.3
Miami.....	9.3	13.1	7.4
Milwaukee.....	7.4	12.1	9.5
Minneapolis-St. Paul.....	9.5	1.3	1.3
Mobile.....	1.3	2.3	2.1
Nashville-Davidson.....	2.1	3.6	2.4
New Haven.....	2.2	19.6	7.8
New Orleans.....	7.8	1.5	1.4
Newport News-Hampton.....	1.4	400.9	174.1
New York.....	151.9	72.3	37.4
Part: New Jersey.....	30.4	328.6	136.7
Part: New York.....	121.5	4.4	3.7
Norfolk-Portsmouth.....	3.7	3.0	2.9
Oklahoma City.....	2.9	3.4	3.1
*Omaha.....	3.1	.3	.3
Part: Iowa.....	.3	3.1	2.8
Part: Nebraska.....	2.8	1.8	1.7
Orlando.....	1.7	1.5	1.3
Oxnard-Ventura-Thousand.....	1.3	1.5	1.4
Peoria.....	1.4	161.5	46.1
Philadelphia.....	33.0	26.1	5.2
Part: New Jersey.....	4.7	135.4	40.9
Part: Pennsylvania.....	28.3		

FORMULA APPORTIONMENTS FOR FISCAL YEAR 1979—Continued

[In millions of dollars]

Urbanized area	Current legislation available for capital or operating	Proposed legislation	
		Total apportionment	Available for capital or operating
Phoenix.....	4.7	5.5	4.7
Pittsburgh.....	11.5	40.3	11.6
Portland.....	5.1	7.7	5.1
Part: Oregon.....	4.7	7.3	4.7
Part: Washington.....	.4	.4	.4
Providence-Pawtucket-WA.....	5.1	5.3	5.1
Part: Massachusetts.....	.3	.4	.3
Part: Rhode Island.....	4.7	5.0	4.7
Richmond.....	2.5	3.5	2.5
Rochester.....	4.3	7.6	4.3
Rockford.....	1.3	1.7	1.3
Sacramento.....	3.7	4.2	3.7
Salt Lake City.....	2.8	3.2	2.8
San Antonio.....	5.1	9.9	5.1
San Bernardino-Riverside.....	3.0	4.1	3.0
San Diego.....	7.5	8.6	7.5
San Francisco-Oakland.....	22.0	51.9	22.4
San Jose.....	6.9	9.4	7.2
San Juan.....	8.6	16.1	8.6
Scranton.....	1.1	1.2	1.1
Seattle-Everett.....	7.6	9.6	7.6
Shreveport.....	1.7	2.2	1.3
South Bend.....	1.7	1.8	1.7
Part: Indiana.....	1.6	1.7	1.6
Part: Michigan.....	.1	.1	.1
Spokane.....	1.4	1.5	1.4
*Springfield-Chicopee-HO.....	2.8		
Part: Connecticut.....	.3		
Part: Massachusetts.....	2.5		
St. Louis.....	13.4	18.3	13.4
Part: Illinois.....	1.8	2.8	1.8
Part: Missouri.....	11.6	15.5	11.6
St. Petersburg.....	3.1	3.6	3.1
Syracuse.....	2.6	3.2	2.6
Tacoma.....	1.9	2.1	1.9
Tampa.....	2.2	2.3	2.2
Toledo.....	3.0	3.2	3.0
Part: Michigan.....	.1	.1	.1
Part: Ohio.....	2.9	3.2	2.9
Trenton.....	2.0	2.3	2.0
Part: New Jersey.....	1.8	2.1	1.8
Part: Pennsylvania.....	.2	.2	.2
Tucson.....	1.8	2.0	1.8
Tulsa.....	2.0	2.1	2.0
*Washington.....	19.6	29.8	19.6
Part: Maryland.....	6.3	8.2	6.3
Part: District of Columbia.....	8.9	12.1	8.9
Part: Virginia.....	4.4	8.4	4.4
West Palm Beach.....	1.5	1.6	1.5
Wichita.....	1.8	4.3	1.8
Wilkes-Barre.....	1.3	1.5	1.3
Wilmington.....	2.4	2.5	2.4
Part: Delaware.....	2.3	2.4	2.3
Part: New Jersey.....	.1	.1	.1
Worcester.....	1.5	1.6	1.5
Youngstown-Warren.....	2.5	2.5	2.5
Alabama.....	2.8	2.9	2.8
Huntsville.....	.7	.7	.7
Montgomery.....	.8	.9	.8
Tuscaloosa.....	.4	.5	.4
Gadsen.....	.3	.3	.3
Florence.....	.3	.3	.3
Anniston.....	.3	.3	.3
Alaska.....	.6	.6	.6
Anchorage.....	.6	.6	.6
Arizona.....			.0
Arkansas.....	.8	.9	.8
Fort Smith.....	.3	.3	.3
Pine Bluff.....	.4	.4	.4
Texarkana.....	.1	.1	.1
California.....	6.2	6.9	6.2
Bakersfield.....	1.1	1.1	1.1
Stockton.....	1.0	1.3	1.0
Santa Barbara.....	.9	.9	.9
Modesto.....	.7	.7	.7
Seaside-Monterey.....	.6	.7	.6

FORMULA APPORTIONMENTS FOR FISCAL YEAR 1979—Continued

[In millions of dollars]

Urbanized area	Current legislation available for capital or operating	Proposed legislation	
		Total apportionment	Available for capital or operating
California—Continued			
Santa Rosa	.4	.5	.4
Santa Cruz	.4	.5	.4
Salinas	.4	.5	.4
Antioch-Pittsburgh	.3	.4	.3
Simi Valley	.3	.3	.3
Colorado	1.2	2.3	1.2
Pueblo	.7	1.3	.7
Boulder	.5	1.1	.5
Connecticut	5.3	7.6	6.3
Samford	1.1	2.7	1.7
Waterbury	.9	1.1	1.0
New London-Norwich	.7	.7	.7
New Britain	.8	.9	.8
Norwalk	.6	.9	.8
Meriden	.5	.5	.5
Bristol	.4	.4	.4
Danbury	.3	.5	.4
Delaware			.0
District of Columbia			.0
Florida	4.8	5.0	4.8
Melbourne-Cocoa	.9	.9	.9
Sarasota-Bradenton	.9	.9	.9
Pensacola	1.0	1.0	1.0
Daytona Beach	.5	.6	.5
Tallahassee	.5	.5	.5
Gainesville	.4	.4	.4
Fort Myers	.3	.3	.3
Lakeland	.4	.4	.4
Georgia	2.8	3.9	2.8
Savannah	.9	1.7	.9
Augusta	.8	.8	.8
Macon	.7	.9	.7
Albany	.4	.4	.4
Hawaii			.0
Idaho	.5	.5	.5
Boise	.5	.5	.5
Illinois	.5	2.7	1.7
Joliet	.9	3.1	2.2
Springfield	.8	.9	.8
Champaign-Urbana	.8	.9	.8
Decatur	.6	.6	.6
Alton	.5	.5	.5
Bloomington-Normal	.5	.5	.5
*Dubuque			.0
Indiana	3.0		
Evansville	.9	1.0	.9
Muncie	.6	.6	.6
Terre Haute	.5	1.4	.5
Anderson	.4	.4	.4
Lafayette-West Lafayette	.6		
Iowa	2.1	3.9	2.1
Cedar Rapids	.7	.8	.7
Waterloo	.6	1.8	.6
*Sioux City	.4	.6	.4
*Dubuque	.4	.7	.4
Kansas	.8	.8	.8
Topeka	.8	.8	.8
*St. Joseph			.0
Kentucky	1.9	2.0	1.9
Huntington-Ashland	.3	.3	.3
Lexington	1.1	1.2	1.1
Clarksville	.1	.1	.1
Owensboro	.4	.4	.4
Louisiana	1.9	2.7	1.9
Monroe	.5	.5	.5
Lake Charles	.5	.5	.5
Lafayette	.5	1.2	.5
Alexandria	.4	.4	.4
Maine	.8	1.7	.8
Portland	.6	.6	.6
Lewiston-Auburn	.3	1.1	.3
Maryland			.0

FORMULA APPORTIONMENTS FOR FISCAL YEAR 1979—Continued

[In millions of dollars]

Urbanized area	Current legislation available for capital or operating	Proposed legislation	
		Total apportionment	Available for capital or operating
Massachusetts	4.4		
Lowell	1.1		
Brockton	.9	.9	.9
*Fall River	.8	.8	.8
New Bedford	.9		
Fitchburg-Leominster	.4	.4	.4
Pittsfield	.3		
Michigan	4.9		
Ann Arbor	1.2		
Kalamazoo	.8		
Saginaw	1.0	1.0	1.0
Muskegon-Muskegon Heights	.6	.6	.6
Jackson	.4	.4	.4
Bay City	.5	.5	.5
Battle Creek	.4		
Minnesota	1.4		
Deluth-Superior	.5		
Fargo-Moorhead	.2	.2	.2
*LaCrosse			.0
Rochester	.4		
St. Cloud	.3	.3	.3
Mississippi	1.7	1.8	1.7
Jackson	1.1	1.1	1.1
Biloxi-Gulfport	.6	.7	.6
Missouri	1.3	2.4	1.3
Springfield	.6	.9	.6
*St. Joseph	.4	.5	.4
Columbia	.3	1.0	.3
Montana	.9	.9	.9
Billings	.4	.4	.4
Great Falls	.5	.5	.5
Nebraska	1.0	1.0	1.0
Lincoln	.9	1.0	.9
*Sioux City			.0
Nevada	.6	.6	.6
Reno	.6	.6	.6
New Hampshire	.8	.9	.8
Manchester	.5	.6	.5
Nashua	.3	.3	.3
New Jersey	1.0		
Atlantic City	.7		
Vineland-Millville	.3		
New Mexico			.0
New York	3.1	3.3	3.1
Utica-Rome	1.0	1.1	1.0
Binghamton	1.1	1.1	1.1
Poughkeepsie	.5	.6	.6
Elmira	.5	.5	.5
North Carolina	5.8	6.7	5.8
Fayetteville	.9	.9	.9
Raleigh	.8	.9	.9
Greensboro	.9	.9	.9
Winston-Salem	.8	1.4	.8
Durham	.6	.6	.6
Gastonia	.5	.5	.5
High Point	.5	.5	.5
Asheville	.4	.4	.4
Burlington	.3	.3	.3
Wilmington	.3	.3	.3
North Dakota	.4	.4	.4
Fargo-Moorhead	.4	.4	.4
Ohio	3.6		
Lorain-Elyria	1.0		
Huntington-Ashland	.2	.2	.2
Springfield	.6	.6	.6
Wheeling	.2	.3	.2
Hamilton	.5		
Steubenville-Weirton	.3	.3	.3
Mansfield	.4	.4	.4
Lima	.4	.4	.4
Parkersburg			.0
Oklahoma	.5	.5	.5
Lawton	.5	.5	.5
Fort Smith			.0

FORMULA APPORTIONMENTS FOR FISCAL YEAR 1979—Continued

[In millions of dollars]

Urbanized area	Current legislation available for capital or operating	Proposed legislation	
		Total apportionment	Available for capital or operating
Oregon.....	1.3	1.5	1.3
Eugene.....	.8	.9	.8
Salem.....	.5	.6	.5
Pennsylvania.....	5.5	6.3	5.5
Erie.....	1.2	1.3	1.2
Reading.....	1.2	1.3	1.2
York.....	.8	.8	.8
Lancaster.....	.7	.7	.7
Johnstown.....	.6	1.2	.6
Altoona.....	.6	.6	.6
Williamsport.....	.4	.4	.4
Puerto Rico.....	2.5	-----	-----
Ponce.....	1.3	-----	-----
Mayaguez.....	.5	-----	-----
Caguas.....	.7	-----	-----
Rhode Island.....	.1	.1	.1
*Fall River.....	.1	.1	.1
South Carolina.....	1.4	1.4	1.4
Greenville.....	.9	.9	.9
*Augusta.....	.1	.1	.1
Spartanburg.....	.4	.4	.4
South Dakota.....	.5	.5	.5
*Sioux City.....	-----	-----	.0
Sioux Falls.....	.4	.5	.4
Tennessee.....	1.6	1.7	1.6
Knoxville.....	1.0	1.1	1.0
Kingsport.....	.3	.3	.3
Clarksville.....	.2	.2	.2
Texas.....	9.0	9.7	9.0
Lubbock.....	.8	1.3	.8
Amarillo.....	.7	.7	.6
Waco.....	.6	.6	.6
Port Arthur.....	.6	.6	.6
Beaumont.....	.6	.6	.5
Wichita Falls.....	.5	.5	.5
McAllen-Pharr-Edinburg.....	.5	.5	.4
Abilene.....	.4	.4	.4
Texas City-La Marque.....	.4	.5	.5
Odessa.....	.5	.4	.4
Killeen.....	.4	.5	.4
Laredo.....	.4	.3	.4
San Angelo.....	.3	.4	.3
Galveston.....	.4	.3	.3
Midland.....	.3	.3	.3
Tyler.....	.2	.2	.2
Texarkana.....	.2	.3	.8
Sherman-Denison.....	.3	.4	.2
Brownsville.....	.2	.2	.2
Bryan-College Station.....	.2	.2	.3
Hartlingen-San Benito.....	.2	.2	-----
Utah.....	1.4	1.5	1.4
Ogden.....	.8	1.0	.8
Provo-Orem.....	.5	.5	.5
Virginia.....	.7	.9	.7
Roanoke.....	.9	.9	.9
Petersburg-Colonial Heights.....	.6	.6	.6
Lynchburg.....	.4	.4	.4
Kingsport.....	-----	-----	.0
Washington.....	.7	.7	.7
Richland-Kennewick.....	.3	.3	.3
Yakima.....	.4	.4	.4
West Virginia.....	2.4	2.6	2.4
Huntington-Ashland.....	.6	.6	.6
Charleston.....	.9	1.0	.9
Wheeling.....	.4	.4	.4
Steubenville-Weirton.....	.2	.2	.2
Parkersburg.....	.4	.4	.4
Wisconsin.....	3.9	4.5	3.9
Duluth-Superior.....	.1	.1	.1
Appleton.....	.9	.9	.9
Green Bay.....	.6	1.1	.6
Racine.....	.8	.9	.8
Kenosha.....	.7	.7	.7
*LaCrosse.....	.4	.4	.4
Oshkosh.....	.4	.4	.4

Question 2. How many municipalities do you regard as likely candidates for new fixed guideway transit systems or major expansions of such systems?

Answer. We do not have a list of "likely candidates" for new or expanded fixed guideway transit systems. These decisions depend, in the first instance, on the transit initiatives of individual municipalities and the results of site specific analysis of urban transportation alternatives. Currently, there are 16 such projects undergoing the initial phase of alternatives analysis and 16 undergoing advanced alternatives analysis. Until these activities have been completed, we cannot judge the acceptability of a fixed guideway system in any area.

Question 3. Because your proposal encourages "joint development projects" which will involve adjacent urban development, do you anticipate that future major transit projects will result in excessive condemnation? What types of "joint development projects" do you envision? What will be the financing relationship in such a venture? Would you approve a "joint development project" in rural or small urban areas where the need for revitalization might be just as great as in urban areas?

Answer. The joint development concept requires a strong local commitment from both the private development sector and local public agencies. We anticipate therefore that the private sector will, in the great majority of cases, have acquired the necessary land, or options thereon, and that the local public sector will have demonstrated its support of the proposed joint development project. This approach should reduce any local condemnation activities to a minimum.

The joint development program will assist activities such as commercial, retail, office and/or industrial development projects, which will be planned as part of the overall development in the region and which may also be used to revitalize depressed areas. The Federal funds would be available to get the project going, but the actual construction of non-transit buildings could not be funded by UMTA.

The basic concept is to use a limited amount of Federal funds as a catalyst to attract private development activities around transit stations which will in turn generate support to the transit facility in terms of ridership.

Joint development would be considered around transit stations in any area where it could be shown to be in keeping with regional development plans and to have significant potential for increased transit ridership; however, available funding would likely limit implementation of such activities to the larger urbanized areas.

Question 4. With respect to operating assistance, your proposal would eliminate the 50% local share and maintenance of effort requirements in existing law and impose a flat $33\frac{1}{3}\%$ maximum on the portion of total operating costs that would be eligible for Federal subsidy. How do you expect this formula to compare with the present formula in terms of percentage and total amount of operating costs now being paid for with Federal dollars?

Answer. The proposed legislation will limit the amount of each area's total apportionment which can be used for operating assistance to amounts equivalent to those apportioned under the factors of population, population density and part of the commuter rail factor. In addition, Federal participation is limited to one-third of total operating costs. In most cities, the limitation on the amounts that can be used for operating expenses—rather than the one-third cap—will serve to maintain Federal operating assistance at its current level relative to total operating costs. This is because in most urbanized areas, including all areas over one million population, the amount available for operating purposes would remain less than one-third of total costs in the area. Of course, the amount used for operating assistance in any given area is subject to the local programming of funds which are flexibly available for either capital or operating assistance projects.

VI. BRIDGES

Question 1. Your bridge proposal represents a substantial increase in funding over the present program level, yet the total authorized level from the Highway Trust Fund appears to correspond with expected revenues. Evidently, the additional bridge money must come from somewhere. Which programs are being sacrificed?

Answer. No programs are being sacrificed due to the increased funding for the bridge program. The \$270 million increase for the bridge program in the first year is provided for by the additional annual authorization of \$525 million provided in the total highway program for that year. Anticipated revenues to the Highway Trust Fund can support this increase in authorizations.

Question 2. It appears that in addition to off-system being eligible for assistance under the proposed bridge program, bridges that were not included in the annual bridge survey would likewise be eligible. What is the reason for this?

Answer. The only change in the bridge eligibility under the proposed program is the inclusion of off-system bridges. Since all bridges over waterways or other topographical barriers on the Federal-aid systems are now included in the bridge survey, there are no additional on-system bridges for inclusion.

Question 3. What is the purpose of giving States the opportunity to identify and inventory bridges of historic significance? Would such bridges be given priority in applying for rehabilitation funds?

Answer. The purpose of this provision is to allow the States to determine whether the bridge is of sufficient historic significance that it should be rehabilitated rather than being replaced by a new structure. There are presently no plans for such bridges to have special or separate priority in the special bridge replacement and rehabilitation program.

Question 4. The DOT's Bridge Report indicated that there are over 105,000 deficient bridges and that the cost to replace these bridges is \$23 billion. Doesn't the Administration's proposal fall far short of addressing this need?

Answer. We believe the funding provided in this proposed program is at the most reasonable level that can presently be used by the States. We will closely monitor State activity under this expanded bridge rehabilitation and replacement program. If it appears that additional funds could be used effectively, we will consider increased funding for the program, depending, of course, on additional revenues.

VII. PLANNING

Question 1. Mr. Secretary, one of the most far-reaching provisions of this bill appears to be the requirement that urbanized areas of 1 million or more population—some 25 of them with a total population of 70 million—obtain approval of their development plans from the Secretary of Transportation to be eligible for highway and transit projects. What justification is there for this substantial shift of decisionmaking power to a Federal cabinet agency?

Answer. Transportation affects, for good or bad, the quality of life of both the individual and the community in the most basic and fundamental ways. Access to transportation is vital for employment, for education, for obtaining the essentials of daily life and for social well being. The design and operation of an area's transportation system affects air quality, energy consumption and land use. Recognition of these impacts must be made a more explicit and overt consideration in transportation decisions. It is in this context that plans and programs will be submitted for approval. This does not involve a shift of local decisionmaking to a Federal cabinet agency; it will assure, at both the local and the Federal level, that transportation is viewed not as an end in itself but as part of a broader social and economic picture.

Question 2. Under the terms of this bill, the planning factors or elements go far beyond the relationship between transportation and physical development, touching on every vital interest of the community—economic, social, environmental, housing, employment, and minorities. What other agencies will be involved? Will HUD, the Labor Department, the Commerce Department, HEW and EPA become involved, and if so, to what extent?

Answer. Transportation is integrally linked with the economic, environmental and social concerns of the community. Legislation in the areas of environment and minorities has further highlighted the importance of these relationships. DOT has cooperated with HUD for a number of years in funding and administering the urban area planning process. We are currently working with EPA to implement the recently enacted Clear Air Amendments. As State and local officials become increasingly involved in new and revised Federal programs, we are aware of their concern that the Feds "get their act together." Consequently, there should be increasing cooperation between Federal agencies

in administering these programs. The degree of involvement and the extent of cooperation will depend on the particular program and the programmatic interests of the agency involved.

Question 3. If a major city permitted a major private development to occur in total disregard of the adequacy of transportation to serve it, would it lose eligibility for Federal assistance for transportation?

Answer. We recognize the limited authority of local jurisdictions to control private development decisions. We encourage the broadest possible participation by the public in the planning process to assure that private development decisions and public improvement decisions are made in concert with each other. Lack of such cooperation, however, has never by itself resulted in a loss of Federal transportation assistance. Transportation assistance is, in fact, one of the means by which local officials are able to influence private development.

Question 4. If a city refused to encourage or permit high density development in rail transit corridors and around stations—an objective of the joint development provision of this legislation—would it be in trouble?

Answer. Coordinated development adjacent to rail transit corridors and around stations is not only included in the legislative proposal, but also is an important element of the Department's Rail Policy Statement and the Department's Recommendations to the Urban and Regional Policy Group. Coordinated development makes sense from the transit productivity aspect and is also an important component of urban revitalization. A rail proposal from a city which refused to encourage or permit high density development would be viewed less favorably than a similar project which does maximize these opportunities.

Question 5. What would be the effect of the new statutory requirement in this bill that "alternative analysis" be applied to highways as similar requirements are being applied currently to urban transit? Could this mean second-guessing at the Federal level of projects already on the designated Interstate System in the absence of any request for withdrawal?

Answer. Analysis of alternative transportation system management and investment strategies will continue to be an important aspect of the transportation planning process as it has been in the past. The proposed statutory requirement will underscore the importance of evaluating alternative strategies. A sound analysis of alternatives will produce a course of action that will optimize any capital investment decisions. The process is not one of Federal level "second guessing" but rather is a positive objective approach to evaluate potential transportation improvements. A wholesale review of all projects on the Interstate System is not envisioned.

Question 6. Mr. Secretary, in drafting the transportation bill what thought was given to long-run land use policy? Does the Department wish to pursue any land use policy? What are your views of the current shifts of population from center cities to suburban areas? Does your draft bill attempt to arrest this movement? Does this bill address implicitly the problem of rural outmigration? Should transportation take the lead in any population distribution policy?

Answer. We do not believe transportation legislation is the proper method for developing national land use or population distribution policy. However, a recognition of the close relationship of transportation and land use and of the need of rural residents for effective transportation systems, is evident in our proposal. Land use decisions and policies will continue to be made by local units of government. Although population shifts have and will continue to occur, movement to the suburbs is not necessarily a negative phenomenon nor is it the intention of the bill to arrest the movement. Growth patterns along with transportation decisions will continue to be determined locally.

VIII. SAFETY

Question 1. In the highway safety construction areas, there is probably as much merit in consolidation of categories—at least in theory—as in other programs. But my concern is that highway safety categories are comparatively new, were enacted by Congress precisely because State flexibility was not doing the job, and that experience based on them—the demonstration effect—has yet to be fully realized. Aside from the concept of consolidation, are we sure this is the proper time in the safety construction areas?

Answer. The purpose of establishing the highway safety improvement programs in 1973 was to focus Federal assistance on safety problems. Until that time safety projects were eligible under regular Federal-aid construction funds but received no separate funding. When it was decided to single out safety as an area for special assistance, the funding was divided into several categories which included: (1) Rail-Highway Crossing Program, (2) Pavement Marking Demonstration Program, (3) Projects for High Hazard Locations, (4) Program for the Elimination of Roadside Obstacles, and (5) Federal-Aid Safer Roads Demonstration Program. It was believed necessary to set up these categorical programs because of the limited traffic accident data, the lack of location reference systems, and the absence of statewide data analysis at that time.

The Administration's bill continues the emphasis on safety as an area warranting special attention but proposes the consolidation of the several categories. That State now have programs underway in each of these areas and have gained the necessary experience to administer an effective safety construction program without the Federal earmarking which now restricts their flexibility.

Question 2. What is the rationale for excluding the National Highway Safety Administration from your reorganization? If administrations responsible for modes differing as widely as highways and transit are capable of being merged, and given the safety implications of highway construction and reconstruction, can't it all be put together? What would be the effect, in a program or policy sense, of combining transit and highways in one administration of your department and leaving a separate administration for highway traffic safety?

Answer. Section 601 of the legislation does call upon the Secretary to consider other elements of the Department in a combined surface transportation agency, in addition to FHWA and UMTA. The consolidation of FHWA and UMTA functions is the minimum level to be considered because of the strong interrelationship and impact of their programs on State and community development through the construction and operation of public facilities for transportation. In doing so, they do or should deal with the same focal point or agency at the State and local level. Although NHTSA also deals in the highway area, its functional relationships and influence is much more diffuse; e.g., with national corporations for vehicle standards, with numerous State and local agencies concerning vehicle operations and enforcement, etc. The advantages and disadvantages of including NHTSA and other existing "surface" elements of the Department in the consolidation will be fully considered during the study.

IX. HIGHWAY SAFETY PROGRAM

Question 1. The proposed bill requires each State to have a highway safety program. Is it intended that the Secretary will require any Standards beyond the six recommended in the July 1977 report?

The bill also states each State *shall achieve* uniformity in certain areas. Is there no time limit under which the States must achieve such uniformity?

Answer. The six requirements identified in the Report to Congress dated July 1, 1977, and enumerated in the bill are the only national Standards to be required. These six areas are: Rules of the road; driver licensing; motor vehicle registration, Titling, and Theft; traffic records; traffic control devices; highway design, construction and maintenance.

In each of the six areas, specifications would be developed in cooperation with the States and communities, and the private sector. These requirements will basically focus on those areas which enhance the uniformity of data and on those rules of the road which are necessary to assure national consistency in terms of the rights and duties of the motoring public. Similarly, the highway related requirements are intended to assure a uniformity of expectation regarding signs and signals and in roadway geometrics. Specific time limits for State adoption or implementation would be developed during the rulemaking process that will lead to issuance of the new requirements. The time limits would reflect the States' ability to adjust their systems and could be modified to reflect special circumstances. This approach is similar to the "reasonable progress" approach to the current standards that was endorsed by the court in *Public Citizen vs. Brinegar* (March 1975).

Although the Department will only be advocating uniform requirements in the above six areas, a key element of the bill is the requirement for each State to have a program development process to identify safety problems, se-

lect appropriate countermeasures and evaluate the effectiveness of the programs. This requirement is intended to upgrade the program management capability of the States by allowing them to concentrate on problems which they themselves identify.

From a program management standpoint, the Department would still prescribe certain funding eligibility requirements such as ambulance specifications and qualified breath testing instrumentation. These requirements would have to be met before Federal funds could be used for the purchase of certain equipment or expended for certain training programs, e.g., Emergency Medical Technicians.

Question 2. It appears that under your proposed innovative Project Grant Program no limitation has been placed on the amount of funds any State may receive in any given fiscal year. Since the current legislation does provide such a limitation, is there a reason why it was eliminated in your bill?

Answer. In our initial development of this proposal, we considered the establishment of an upper limit on the maximum amount of funds each State could receive. However, we felt that sufficient experience did not exist to establish such a limit at this time. We expect that the procedures to be established regarding the review of proposed projects will result in a *de facto* limit on the amount to be devoted to a single project.

Question 3. Under the current legislation, there is a provision for a school bus driver training program. I have not observed such a provision in your proposed legislation. How do you propose to handle this?

Answer. The school bus driver training section has not been well received by many States, particularly those which already had good training programs. Under the bill, the States would no longer be required to obligate funds for school bus driver training. Those that consider their training programs to be inadequate could spend their Federal funds on training, as they have under the current Section 406. States whose programs are adequate would continue those programs with their own funds and devote their Federal funds to other problems. The Department would continue to provide training guidelines in this area and would continue to monitor the States' activities.

Question 4. Proposed Section 404 is captioned "State Highway Safety Agency" but the language of that Section contains no reference to a State highway safety agency per se. Would it be good idea to suggest that the States carry out the provisions of this Act through a "State Highway Safety Agency". (This Committee provided in its bill in 1970, which led to the Highway Safety Act of 1970, for a "State Highway Safety Agency" but this was reduced in Conference, apparently, by the Senate to a "State Agency".)

Answer. The intent of this section is to ensure that there is an agency at the State level which is responsible for the State highway safety program, including the assistance to local programs specified in Section 405. Such an agency would not be required to have the title State Highway Safety Agency, nor would its responsibilities necessarily be limited exclusively to the highway safety program. We believe States should have flexibility as to the specifics of organizational arrangements as long as there is one agency which is responsible for this program.

Question 5. With regard to funding to assist in enforcement of the 55 mph national speed limit, it appears that the proposed legislation would provide for this funding along with other high priority safety programs by earmarking a portion of each State's 402 money for this purpose. Would it not be more desirable to provide a separate fund for 55 mph enforcement upon which the States can rely?

Answer. The bill does provide funding which States can rely upon for enforcing the 55 mph national speed limit. The bill authorizes the Secretary to separately apportion to the States, in accordance with an administratively determined formula, up to 25 per centum of the funds authorized to be appropriated for any fiscal year for carrying out high priority safety programs, including expanded enforcement of the 55 mph speed limit. It is our intent that these funds will be directed toward enforcement of the 55 mph national speed limit. The bill additionally provides a 5 to 10 percent penalty of a State's Federal-aid highway apportionments for failure to meet specified speed performance criteria, thereby providing a strong inducement to States to expand their 55 mph enforcement programs.

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS,
Washington, D.C. February 8, 1978.

HON. JAMES J. HOWARD,
Chairman, Subcommittee on Surface Transportation, Rayburn House Office Building, Washington, D.C.

DEAR MR. CHAIRMAN: The National Society of Professional Engineers, a nonprofit organization representing 75,000 individual members who are involved in every aspect of engineering, is pleased to submit a statement on H.R. 10578, the Administration's transportation proposal. I request that the statement and this letter be included in the Subcommittee's hearing record on this subject.

In its statement, NSPE confines its comments to those areas that are covered by our existing policy. We have, however, established an expert's committee to thoroughly review the proposal. When this work is done, NSPE will provide the Committee and the members of the Committee with a copy of our report. It is anticipated that the work will be finished late in March.

If you or any other members of the Subcommittee desire additional information, please do not hesitate to contact NSPE.

Sincerely,

MICHAEL M. SCHORR,
Director of Legislative and Government Affairs.

STATEMENT OF THE NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

The National Society of Professional Engineers appreciates this opportunity to present its views on H.R. 10578 the Administration's proposed Highway and Public Transportation Improvement Act of 1978. NSPE is a nonprofit organization representing 75,000 individual members who are involved in virtually every aspect of engineering.

NSPE has not had the opportunity to review the Administration's proposals in great depth and because of this will confine its remarks to those items falling within existing policy. We have, however, established an expert's committee that will thoroughly review the proposal and we expect to have the results of their work available for the Committee's use late in March. When we have completed our work, we will forward our recommendations to the Committee and its members.

Generally speaking, NSPE is pleased with the direction that the Administration is taking with regard to transportation policy. Undoubtedly, transportation programs need the flexibility necessary to meet the many challenges that confront us with regard to transportation. An expenditure of more than \$10 billion on an annual basis requires a considerable amount of "flexibility" if that money is to be spent effectively and efficiently.

GENERAL COMMENTS

Before commenting on the specific provisions of H.R. 10578, we would like to provide the Committee with several overall concerns of NSPE.

NSPE believes that the Nation's transportation system, probably the best in the world today, is at a crisis point. We are concerned that the tremendous investment in our highway system may not be as effective as contemplated unless programs are initiated to maintain the system.

The Nation's primary and secondary roads and major urban streets are in a state of serious neglect. Many Interstate system designs need major modernization. Major safety improvements, such as median barriers, long merging lanes, and improved ramp design, just to mention a few, are sorely needed. Rural roads desperately need widening. Hazardous curves, fixed obstructions and dangerous grade crossings also need attention. Urban streets need better lighting, improvements of intersections, and more turning lanes. All roads and highways need better planning to allow for increased system capacity. Planning also needs to be improved if energy use is to be reduced. Unless there is a reduction of starting and stopping and excessive idling of vehicles, fuel reductions will not reach the optimum level. Better land use planning that improves travel patterns will also reduce fuel consumption.

NSPE strongly believes that proper use of engineering can improve the transportation system. Today's technology can address and solve the problems that now exist. We simply ask that the technology be applied. Private sector technology is available in sufficient quantities to solve planning, design and construction problems.

PLANNING

H.R. 10578 attempts to establish an integrated transportation planning system. The bill combines the highway and transit funds and apportions the money to states and metro planning agencies by formula. Also, it requires the Secretary of Transportation to review the transportation plans of large metropolitan areas.

NSPE recognizes the concerns expressed by states with the intrusion of a new entity—the large metropolitan area planning organization—into the planning process. We are not certain that Federal grants directed to that entity, bypassing state review, are advisable. Also, it is likely that a new layer of bureaucracy will only compound existing “red-tape” problems rather than eliminate them. NSPE is of the opinion that state officials should play a role in transportation planning and believes that direct funding of large metropolitan planning organizations will be a deterrent to this principle.

NSPE also questions the advisability of mandating that all large urban plans be reviewed by the Secretary. We are hesitant to support such Federal preemption of state activity. In addition, we are not all sure that such a procedure may act as a bottleneck that will hold up good programs, rather than serve as an early warning device as envisioned by the Administration.

BRIDGES

NSPE is particularly concerned with the condition of this Nation's bridges. As this Subcommittee knows, this very serious problem is in need of immediate attention.

The Federal Highway Administration's 6th Annual Report to Congress on Bridge Replacement identifies 105,500 bridges that are either structurally deficient or functionally obsolete. Based on this, it has been established that at least \$20 billion is needed to repair, replace or rehabilitate these bridges.

Although the Administration recommends an increase in the bridge repair program of more than 100 percent and expands the bridge replacement and rehabilitation program, NSPE questions the sufficiency of the recommended funding. We believe that funding should be at a level that will eliminate the problem in a realistic period of time. Reportedly, it would take more than 40 years to remedy the bridge problem that exists today if the Administration's funding recommendation is accepted. We would hope that sufficient Federal-state funds would be available to complete the work in less than 40 years. Also, it should be remembered that bridges acceptable as safe today may need repair or replacement in the future.

INTERSTATE SYSTEM

NSPE applauds the Administration's effort to complete the Interstate highway system. When the system is completed it will have cost approximately \$104 billion. In view of this vast expenditure, it is extremely important that the system be completed and kept in operating condition. Consequently, NSPE supports the effort to complete the system by 1990.

As this Subcommittee knows, over 90 percent of the Interstate system is now being used. Essential gaps in the system need to be closed to gain full use of the system. Proposals to transfer funds between states may be an answer. It seems inconsistent that states that have projects ready for construction are hindered, while money is waiting for action in other states. The borrowing of funds between states will accelerate the completion of the program. Also, borrowing from future years apportionments to begin work now may also serve the purpose well. Such a transfer of funding will also allow for expenditures in a more effective and efficient manner.

NSPE, as previously mentioned, strongly believes that the Interstate system needs to be maintained in operating condition. Consequently, we support the continuation of a separate program to provide for Interstate resurfacing, res-

toration and rehabilitation. We believe, however, that this program needs increased funding. Authorizations of \$175 million annually are insufficient to bring the system up to an operating condition much less keep it there.

PRIMARY SYSTEM

NSPE questions the Administration's wisdom in consolidating many existing categorical programs affecting the primary highway system. Although the Administration assumes "consolidation" is the "mood" of the day, we are not sure that this is the proper course of action. Although flexibility is desirable and the Administration uses the concept of flexibility as the basis for its recommendation, NSPE believes that some very important programs, needing Federal assistance, may lose their identity if they are thrown into a single pool. Congress previously determined that these programs needed special attention and we think it unwise to combine them at this time.

NSPE also notes that funds for several programs are shifted in H.R. 10578 from the General Fund to the Trust Fund. We are not sure that this shift of programs, totaling \$430 million in fiscal year 1978, is a wise move. In our final report to the Committee, we expect to comment further on this recommendation. Also, we note that there is not funding recommended for forest roads and trails, parkways, and park roads and trails. These programs totaled \$308 million in fiscal year 1978.

SAFETY

NSPE applauds the Administration's recommendation to provide funding for the purchase of truck weight scales. We believe that such a program will provide states with the necessary equipment to better enforce truck weight limitations. NSPE believes that the operation of big trucks on the highways directly relates to the deteriorating condition of the Nation's highways.

We urge the Committee to include funding for the manpower necessary to use the scales once they become available. If manpower is not available, the capital expenditure would have nil effect.

NSPE wishes to assure the Committee of our continued interest in the transportation problems of the Nation. We will forward to the Committee and to each member of the Committee our final recommendations when they are available.

STATEMENT OF ROBERT B. WYLAND, PRESIDENT, SAFETRAN SYSTEMS CORP., LOUISVILLE, KY., ON BEHALF OF THE RAILWAY PROGRESS INSTITUTE, ALEXANDRIA, VA.

(In support of H.R. 8648 (Howard, D-N.J.) to preserve dedicated Federal funding at the 90-10% level, of highway/railroad grade crossing safety programs.)

STATEMENT OF PROBLEM

The House has been considering H.R. 8648, the proposed Highway Act of 1978. The Railway Progress Institute and its 150 member companies with 500,000 employees fully endorses those sections dealing with rail/highway crossings. H.R. 8648 under Section 203 specifically dedicates funds at the 90%-10% level for grade crossing safety improvements both on and off the federal highway systems. DOT Secretary Adams is supporting substitute measures, H.R. 10578 and S. 2440, that would eliminate all dedicated funds, and delegate to the states the determination as to how to allocate their highway monies. Furthermore, the substitute measures propose a 100% increase in the level of state and local funding required for grade crossing safety improvements.

It is our considered opinion that the substitute measures would destroy the effectiveness of the national grade crossing safety program, first instituted under the Highway Act of 1973 and continued under the Highway Act of 1976.

As this Subcommittee is well aware, school bus safety has long been a high priority in the list of Congressional concerns. A particular concern of ours is that the safety of one special class of highway citizen, namely, the nation's school children, would have to compete with pot holes for federal highway safety funds. As the National Transportation Safety Board stated as recently

as August 11, 1977, in its report of a Stratton, Nebraska accident involving a bus and a Burlington Northern freight train when nine were killed, there must be an improved program to "combine efforts to develop and implement a uniform system of warning devices to attract the attention of motor vehicle drivers approaching railroad/highway grade crossings." I submit, Mr. Chairman, we do not need another catastrophic accident to impress Congress with the need to heighten grade crossing safety as a separate line in federal funding. Our above opinion stems from the following considerations:

1. History of national grade crossing program

Prior to 1973 there were no dedicated federal funds for states to use to pay for installing or upgrading grade crossing warning systems. There were only "G" funds. Each state was authorized to use up to 10% of their monies from the Highway Trust Fund to reimburse the railroads for what generally amounted to up to 90% of the cost for each crossing—but only on the federal aid system.

Except for a few states, very little was accomplished on a national scale since the number of crossings off the federal aid system constituted almost 80% of all crossings. As a result the country continued to experience between 1100 and 1500 fatalities and 3-4000 injuries annually from grade crossing accidents. Furthermore, the railroads have always believed that grade crossings should not be the railroads' financial responsibility. Mr. B. F. Biaggini, Chairman of the Board and Chief Executive Officer of the Southern Pacific Transportation Company recently stated: "Grade separation structures and automatic grade crossing protection devices should be recognized as parts of the street and highway system, and as such, paid for by the governmental agencies involved."

In 1972 the FHWA and the FRA submitted a joint report to Congress arguing that this serious a problem justified a more organized attack and in particular, dedicated funding.

Their report stated: "Over 70,000 people have lost their lives at railroad crossings in the past 50 years. Over 15,000 in the last decade. The shock of this statistic alone is enough to warrant an intensive countermeasure effort." In some specific aspects, the problem is more severe than one might guess. Consider that the fatality-to-injury ratio for crossing accidents by some estimates is 40 times that for all motor vehicle accidents. Thus, the violence of crossing accidents is clearly evident.

DOT's report further stated: "Figures showing annual number of accidents per crossing indicate quite clearly, particularly in the higher traffic volume ranges, that the crossings with active protection can be expected to experience a lower average number of accidents per crossing than those with passive protection." In that connection the report stated that "only 8944 or 18% of the 45,528 then actively protected crossings are equipped with automatic gates, which is the most effective type of protection. The installation of automatic gates can be expected to further reduce the rate of accidents per crossing to about one-half of that indicated for actively protected crossings without gates."

And finally the DOT saw the exposure to accidents becoming even worse. "During the most recent 10 year period freight train miles increased about 10%. The decline in passenger train miles appears to be stabilized. With continuing increases anticipated in motor vehicle miles of travel all indications point toward a greater upward trend in the potential for conflicts between these two modes of travel at railroad/highway crossings in the near future."

DOT concluded its 1972 Report to Congress by stating: "We need to increase the rate of installation of new or upgraded train activated warning devices." A goal of installing active warning devices at 3000 grade crossings per year for 10 years was suggested. Combined with a continuing program of justified grade separations, it was projected that upon completion of these improvements we could eliminate nearly 4000 motor vehicle/train collisions annually and save 500 lives a year.

2. Performance under the highway acts of 1973 and 1976

Typical of what has happened nationally is the experience in Illinois: "Funds under the Act of 1973 were first available in Fiscal Year 1974. All of the usual problems of initiating a new federal program resulted in minimal accomplishments that year. In Fiscal 1975, 76 state and local projects were initiated

with a value of just over \$2 million. The Fiscal 1976 program included 163 state and local projects totaling \$5.4 million. \$8.5 million was scheduled for 1977" Source—Illinois DOT 7/26/76 Program for Railroad/Highway Crossing Protection.

California, one of the few states that already had an established and effective program built around active equipment, was able to report in its 1975 annual PUC report that its ratio of crossing casualties to all highway casualties had declined from 3% in 1958 to 2½% in 1967 and 1¼% in 1975.

Further positive testimony came from Howard Anderson, Associate Administrator for Safety, FHWA, at the National Conference on Railroad/Highway Crossing Safety, Salt Lake City, August 24, 1977, commenting on national results: "Recent figures published by FRA indicate that fatalities resulting from train/motor vehicle accidents are considerably down since the mid 1960's."

"The 1975 figure of 788 fatalities marked the first time since such records have been compiled that the figure was below 1000." And he added the more active states like Florida and Georgia experienced more dramatic reductions of 35-40%. In California, of 1552 grade crossings where automatic warning devices were installed between 1960 and 1970, accidents were reduced by 69%.

The experience of the Burlington Northern (BN) is most interesting. That one railroad alone has some 20,700 public crossings in 16 states. At these crossings they have some 3000 active warning devices and 17,700 passive warning devices. At the same 1977 Conference in Salt Lake City, Mr. D. D. Thomas, Director, Public Works Planning for the BN reported: "The BN presently has over 450 active projects which we are now processing in one phase or another, from formal request to final bill pending, that amount to more than \$20,500,000. Out of this total cost \$700,000 are actual BN expenses, or about 3.5% of total cost. In January 1974 we had about 225 active projects at a total cost of \$6,000,000."

Mr. Thomas continued: "The point I want to emphasize is that the Federal Aid Act has not only been a fantastic safety program but the railroads probably could not have afforded such a program without the assistance of this Act."

Speaking further to the understandably slow rate of obligation of crossing monies in the first two years of the program, Mr. Thomas commented: "The establishment of the grade crossing inventory program and for the states to provide for a systematic approach to the planning and prioritizing of these projects took time. In fact the impact of this program was not really felt by the railroads until 1975. At this time the states were well organized and their projects prioritized and ready for formal presentation to the railroads. The railroads after completion of the inventory were lulled into complacency because of no action by the states, not knowing the states were actually prioritizing these projects in mass numbers. When the dam broke and the projects started to flow the impact upon the railroads was quite dramatic."

The RPI made a substantial contribution to getting the program off the ground. Under its auspices the supply industry formed a task force composed of the most knowledgeable crossing warning system experts in the field. They put together a workshop on the history and technology of crossing warning systems and details as to the mechanics and organization of the more active and successful state programs.

To date there have been 15 RPI sponsored workshops involving 28 states and 1224 state, federal and railroad personnel. We are pleased to note that our allied organization, the Association of American Railroads, has begun to conduct similar workshops with federal and state highway officials participating.

3. Conclusions and recommendations

Mr. W. L. Oliver, Principal, Transportation Division, California PUC at the 1977 Conference in Salt Lake City made the following comments: "The federal program created some real bonuses in grade crossing improvement. It made highway crossing safety a nationally recognized problem.

With the railroads not involved in signal installation costs, it has made them an ally—where sometimes in the past they were opponents. It has changed State Department of Transportation's attitude toward spending funds of the state highway system. It has forced everyone to look at the overall picture from a national and statewide level, rather than crossing by crossing, city by city, and railroad by railroad. And lastly, research is being carried out that is

long overdue and that may never have been commenced had not the federal program been initiated."

Obviously the fear of many states, the supply industry and the railroads is this:

Having organized to do a job that was not being done before the advent of dedicated funds under the Highway Act of 1973, the ten year program first envisioned by DOT will rapidly wind down—in mid stream. Without dedicated funds we believe the crossing problem will be "out-muscled" by the "pot-hole" problem. In other words, if you really want to get something done, specialized staffs such as have been built up in each state since 1973 and special dedicated budgets have proven their effectivity.

Mr. Oliver of California addressed himself to the right way to go in the future. A veteran of 16 years in the California PUC he recommends:

"To eliminate many of the problems endured in the past, which I have included in the subject of split jurisdictions, several things could be done. First put all of the funds in one (dedicated) pot and eliminate the two-highway system of funding. Second, eliminate the 10% funding by the state or local agency and have the federal program pay for 100% of the improvements. The 10% only creates more paperwork and is almost self defeating financially. Third, concentrate on eliminating the source of the accidents. Defer programs such as surface and pavement improvements, etc., until accident problems are solved and sufficient funds are made available for these other projects.

Fourth, loosen the screws on the state programs so more flexibility can be achieved at the lowest level, the local agency. Fifth, encourage closures by giving a monetary bonus in supplemental funding when crossings are closed."

Mr. Chairman, RPI strongly urges that prompt and favorable action be given to the grade crossing provisions in Subcommittee Chairman Howard's bill, H.R. 8648.

NATIONAL GOVERNOR'S ASSOCIATION,
Washington, D.C., February 8, 1978.

HON. JAMES J. HOWARD,

Chairman, Committee on Public Works and Transportation, Subcommittee on Surface Transportation, Rayburn House Office Building, Washington, D.C.

DEAR MR. CHAIRMAN: On behalf of the National Governors' Association I would like to file the following statement for the record as you prepare new legislation for surface transportation.

For the most part, the policies the Governors have worked on over the past two and a half years support your Committee and the Administration's efforts to bring about a coherent national transportation program. However, I would like to point out our concern that transportation programs and planning should have an appropriate state role. NGA policy describes and affirms that appropriate state role. We oppose legislation that would bypass the states in order to provide direct funding to metropolitan areas of over 1 million population.

We stand ready to discuss with you our concerns and mutual interests.

Sincerely,

GEORGE BUSBEE,
*Chairman, Committee on Transportation,
Commerce and Technology.*

STATEMENT OF GEORGE BUSBEE, GOVERNOR OF GEORGIA, CHAIRMAN, COMMITTEE ON TRANSPORTATION, COMMERCE AND TECHNOLOGY, NATIONAL GOVERNORS' ASSOCIATION

Mr. Chairman, and members of the Committee, I am here today, first as Governor of Georgia and also as Chairman of the National Governors' Association Committee on Transportation, Commerce and Technology.

The Governors have worked hard over the past two and a half years to develop an integrated national transportation policy to guide us in the pursuit and achievement of national goals. It is our belief that national transportation programs stemming from such a policy should encourage the development, coordination, operation and maintenance of transportation systems and services in a fashion that provides optimum capability for the movement of people and goods in the most efficient, convenient, safe and reliable manner.

My purpose is to put before you the Surface Transportation Policy positions of the National Governors' Association and in some cases discuss how they relate to the Administration's proposal for surface transportation. These policies reflect the pragmatic coalition of common interests of the nation's chief executives and are filed as a part of my statement. Our objective is to enhance and ensure the Federal-State-Local partnership for the development and implementation of transportation programs.

We feel the Secretary and Department of Transportation staff also exemplified their commitment to this objective by the open, cooperative and determined manner in which they sought out and involved interests at all levels in development of their legislative proposals. The Secretary has taken every opportunity to counsel with the Governors and much of their thinking is evident in the Administration proposals.

The Governors have continually encouraged energy conservation as a first important step in promoting the Nation's independence from foreign oil. We also recognize that this posture cuts another way. All States have felt the impact of declining motor fuel tax collections. Industry and governmental energy conservation actions have already, and continue to have a depressing effect on such revenues in years to come. At the same time the maintenance and upgrading of the nation's 3.8 million miles of roads and streets require ever-increasing expenditures. Improvements to highways can in themselves be a source of energy conservation. The certainty of declining revenue at the State level when compared with the increasing requirements for upkeep and improvement demands a greater level of Federal participation in the financial support of a balanced highway system. The Governors believe it is appropriate that the Congress approve legislation which would provide for (1) early completion of the Interstate System with its 90-10 participation ratio, and (2) provide funding support at the 80-20 participation level for the second level highway systems and programs.

With regard to the Interstate System, now is the time to adjust the flow of federal funds for construction of the Interstate System in a fashion which will allow completion by those states which are ready. The Secretary of Transportation should be permitted to make transfers to states which have insufficient apportionment balances and which are ready to build interstate projects. Such transferrals should be approved on a project-by-project basis only. These transfers should be from those states which have accumulated large unobligated balances to those states which have low or no balances and are ready to build. No state would be hurt by this arrangement since the interstate cost estimate of the loaning state would retain the total cost of that state's system. The money could be spent earlier and the national system would be completed earlier. Reduction of the obligational authority limitation from four to two years would permit expeditious use of funds appropriated by Congress.

The Governors' Association in general supports the portions of the Administration's proposed bill as it relates to the Interstate program.

We applaud the efforts outlined in the Bill by the Secretary to complete the Interstate System. Some excellent mechanisms to achieve solid goals have been proposed. However, I have grave concern regarding the proposed change in the Interstate apportionment formula as it attempts to address the problems of "essential gaps" in the system. To incorporate this proposal into law would clearly and unfairly punish those states that have been aggressive and innovative in completing the gaps in their systems. Also the method proposed for defining "essential gaps" leaves much to be desired.

There is one omission which we would like to have corrected. Our policy calls for the provision of the sale of bonds by those states that wish to do so in order to complete the system early. We would like to see a provision to allow federal participation in interstate costs for bonds sold by states to complete the system ahead of federal apportionments.

The Governors' Association has long supported the reduction in the number of categories in the primary, secondary, urban and safety programs funded by the Congress. We think this will go a long way toward removing some of the red tape from the highway program. The individual states have individual needs. Flexibility in the use of federal funds through reduction of categories and through a high percentage transfer factor would help immensely. We note with pleasure that the Administration proposals include both a reduction in categories and more flexibility for the States.

Annual vehicle travel continues to increase. At the same time, the fuel efficiency of those vehicles is also increasing. The amount of funds which are available to the states for road and street improvement and maintenance is proportional to the amount of motor fuel consumed. What all this means is that the increase in vehicle travel results in an increased need for more improvements and rehabilitation, but the available funding available for satisfying these needs remains the same or is decreasing. The 3-R Program which was funded by the Congress at a \$175 million level has proven to be of value to the states in the resurfacing, restoration and rehabilitation of the older elements of the Interstate System. That program gives some relief to the dilemma just mentioned and should be continued and financed at a much higher level. The funds should be distributed among the states based upon the number of lane miles over five years old and the frequency of heavy load applications.

Because of the magnitude of the bridge problem facing the states, it is the judgment of the nation's governors that the category of special bridge replacement should be continued. During the past six years, about \$639 million has been spent in replacing approximately 1,000 bridges. Expansion of this program to permit rehabilitation as well as replacement would be more cost-effective. Funds should also be made available for construction and rehabilitation of off-system structures because they also require major attention.

In the State of Georgia, the condition of bridges not on the State Highway System is of such a critical nature that I have recommended to the Georgia General Assembly that general funds of the State be appropriated to the Department of Transportation for the repair and/or replacement of these structurally deficient bridges.

Further, in Georgia the need for the repair and rehabilitation of roads and streets not a part of the Federal-aid or State Highway System is accruing at a rate greater than the abilities of our cities and counties to meet these needs. I have been so concerned with this problem that, for the second consecutive year I have recommended to the General Assembly that general funds of the State be appropriated to assist the cities and counties in meeting these needs. Last fiscal year, \$38 million was appropriated for this purpose and this year I am proposing that \$38 million be provided for off-system roads and bridges. I also suspect that Georgia is not unique in this dilemma but shares it with all other States. We need a stronger program to provide Federal assistance in the repair and rehabilitation of off-system roads and bridges.

The Foundation needed to accomplish the careful development and wise use of our scarce resources, social and environmental enhancement, preservation of private and public investment, national security, and the individual's need for effective mobility in transportation programs is a sound transportation planning base. A test of soundness for such a base is comprehensive transportation planning. We find the Administration's proposal for direct funding and separate handling of the Nation's major urbanized areas to be inconsistent with such a comprehensive approach.

Transportation planning in the large cities cannot be divorced from transportation planning in the remainder of the State. The two portions are integral parts of a State's plan to meet its development needs and the mobility needs of its citizens. The planning and implementation cannot be disjointed, at the urbanized area boundary.

We once referred to this Nation as "These United States". I think I could get most of the Governors to agree to now refer to our Nation as "The United States". This proposed legislation would change that in transportation to "The United States and 25 Urbanized Areas". There is enough division between governmental levels in this Country. Let's not create still another contest for Federal funds.

The first area planning group in this Nation was created in Georgia and we were the first State to have all of our political subdivisions members of an area or metropolitan planning commission. These area planning commissions, or metropolitan planning organizations, generally work well with state and local governments but they were created to plan, not to implement. Each year in Georgia fights and arguments occur in our General Assembly between our local governments and the area planning commissions for the attempts of non-official, non-elected groups to take authority as it relates to planning and implementation involvement. The Administration's proposal would, in effect, create another level of government for transportation without all of its officials being elected at the ballot box.

For fear that my criticism of the urbanized area concept might be misconstrued, let me stress that I have no qualms about the ability of a city the size of Atlanta to plan, design and execute major projects.

I do, however, wish to point out that the Atlanta urbanized area consists of 21 cities and pieces of eight counties of various populations and with varying levels of staff expertise. To expect me as Governor to single out one super entity in that complex urbanized structure to apply for and receive federal funding for the entire metropolitan area would be unrealistic, and unfair and would constitute a new layer of bureaucracy with life or death powers over transportation. We have spent years building one of the nation's foremost departments of transportation at the state level to see that Georgia's transportation needs are met in a cohesive and unified manner. The urbanized area concept, as I see it, could only undermine local governments.

One principle common to our policies is that governors should have control over programs within their states. Requirements for transportation and land-use plans to be approved by federal officials is in conflict with that principle.

Thirty-nine of the states have consolidated their efforts by creating departments of transportation to coordinate programs for dealing with all modes of transportation. This permits functional accountability, promotes the wise use of scarce motor fuels and enhances the capability for a balanced approach to the problems and opportunities in the field of transportation. We believe that the metropolitan planning programs can, and do, provide local and comprehensive planning which can be coordinated at the state level to insure that the programming of projects appropriately addresses transportation needs.

The states are constitutionally responsible and equipped to determine and fulfill the general transportation needs of the nation. The nation's governors collectively believe that all transportation funds, except for directly administered federal programs, should flow to the states. Individual states with appropriate authority and a suitable degree of flexibility can position funds among various transportation programs to meet priority needs of each state and of its local governmental units. If all eligible urbanized areas of more than one million population were designated as the recipient of transportation funds, it is my opinion that transportation programs would suffer and the necessary service levels would decline rather than increase in the majority of those areas.

Although, Mr. Chairman, we realize that your committee's primary concern is with the highway aspects of the Administration's proposed legislation, the public transit provisions also contained therein are of vital importance and concern to us all.

We recognize that public transportation is a necessary component in the total transportation picture and that it cannot survive without governmental assistance for capital outlays and operating subsidies. A combined effort of federal, state and local funding is necessary to improve existing public transit service and to establish new services where needed.

In the short time available to me, I have tried to emphasize the highlights of the governors' concerns on transportation at all levels of government. The nation's governors in their statements of policy on this subject have expressed many additional views and suggestions for strengthening the capability of the transportation industry. We share a common goal that intrastate and interstate transportation of people and goods should be cost-efficient, yet meet the nation's needs.

I would be pleased to answer any questions you may have.

JOHN L. INGOLDSEY,
ARTHUR E. CAMERON,
ATTORNEYS AND COUNSELLORS AT LAW,
Washington, D.C., February 1, 1978.

HON. JAMES J. HOWARD,
Chairman, Subcommittee on Surface Transportation, Committee on Public Works and Transportation, U.S. House of Representatives, Rayburn House Office Building, Washington, D.C.

DEAR MR. CHAIRMAN: I am writing in behalf of the Ad Hoc Committee on Traffic Control Signalization and refer to your statement during the February 1

hearing of the Subcommittee on Surface Transportation wherein you invited comment on the proposed highway, public transportation and highway-safety related legislation.

I respectfully request that this letter and the two attachments mentioned herein be printed in the formal hearing record in accordance with your statement of February 1.

You will recall that the Ad Hoc Committee on Traffic Control Signalization testified before the Subcommittee on Surface Transportation on September 29, 1975. That 1975 presentation was in support of the subsequently-enacted Traffic Control Signalization Demonstration Program (Public Law 94-280, Section 146). This earlier testimony brought to the Committee's attention the myriad problems encountered by the towns, cities, counties and, ultimately, the states in upgrading and coordinating traffic control signal systems. The conclusion, then as now, is that signals are not always installed as a result of need based upon a comprehensive coordinated plan but frequently on a "crises response" basis instead.

In addition to defining the problems related to traffic control implementation, this 1975 testimony also set out the then-known benefits resulting from the upgrading and coordination of such systems. These recognized benefits included a 25 percent increase in the traffic capacity of existing highways, a 45 percent improvement in travel time, a 15 percent reduction in total accidents, a 30 percent reduction in injuries, and a phenomenal 48 percent reduction in fatalities.

Other benefits recognized in the 1975 testimony, but not then susceptible to evaluative analysis due to lack of data, included increased pedestrian safety and mobility (especially with regard to the increasing use and popularity of "right turn on red" and the related increase in pedestrian crossing hazards), more efficient public transportation operation ("carpooling" and bus lane signalization), reduced vehicle operating costs (wear-and-tear on vehicle components, i.e. tires and brakes), noise abatement, and highway construction and right-of-way cost reductions. Further, this testimony also dealt with the projected savings that could be achieved from coordinated signalization in the area of energy (fuel) consumption together with the concomitant reductions in exhaust emission pollutants.

The reported accident data mentioned above were based upon two pre-1974 FHWA reports (Jorgensen, 1966, and Dale, 1973). A more recent FHWA report, entitled "Evaluation Of Highway Safety Program Standards Within The Purview Of The Federal Highway Administration" (March, 1977) and herein-after referred to as "Jorgensen, 1977," indicates that the safety countermeasure identified as "traffic signals, installed or improved" reduced the number of fatalities from a "before" figure of 87 deaths to an "after" figure of 43, indicating an overall reduction in fatalities of 50.6 percent and an anticipated "average annual fatality experience" reduction of 49 percent. This latter figure improves slightly on the 48 percent fatality reduction noted in the Dale, 1973 report.

Further, the "Jorgensen, 1977" study, evaluating approximately 700 traffic signal projects, reports an expected annual accident reduction of 18 percent (as compared with Dale, 1973, at 15 percent) and an expected annual injury reduction of 32 percent (as compared with Dale, 1973, at 30 percent).

The dollar savings related to these reductions in accidents, injuries and fatalities as compared to the cost of the design, installation and upgrading of those systems evaluated resulted in a benefit-cost ratio of 6.36:1.

The energy benefits that the upgrading and coordination of traffic control systems can yield are best described in the December, 1977, report of the Secretary of Transportation to the Congress regarding the Department of Transportation's evaluation of the Traffic Control Signalization Demonstration Program as follows:

"Preliminary estimates* indicate that the improvements made by these 26 projects, encompassing 1600 intersections, will save motorists more than 11 million gallons of fuel annually or about \$7.2 million per year at \$0.65 per gallon. This will result from motorists having to make 20 percent fewer stops, a conservative estimate."

The report goes on to state:

"In addition to fuel savings, it is estimated that automobile exhaust emissions will be reduced annually by 31 tons of hydrocarbons and 14,600 tons of carbon monoxide."

The above assessment from the Secretary's report regarding both the energy savings and the cost benefit is derived from preliminary estimates related to only 26 projects which were funded with the original \$10-million appropriation for the initial implementation of the Traffic Control Signalization Demonstration Program.

Not only is the national interest served by conserving 11 million gallons of fuel *annually*, but, as stated in the Secretary's report, these preliminary estimates also indicate that the cost savings to the motorist (taxpayer) in fuel alone, on a per-year basis, is \$7.2 million. In other words, the \$10-million Federal expenditure is recouped in less than seventeen months, while at the same time fuel consumption is reduced by 11 million gallons annually. When you consider the fact that the operating life of the equipment is at least ten years, simple multiplication shows that the benefit-cost ratio for these few projects is 7.2:1 for fuel savings alone. These estimates are based on the Secretary's per-gallon figure of \$0.65.

This energy-related benefit becomes all the more impressive when added to the "Jorgensen, 1977" figure reported above which indicates that the safety benefit of the traffic control signalization countermeasures yields a benefit-cost ratio of 6.35:1. Based upon these figures, the combined energy and safety benefit-cost ratio is 13.56:1.

Further, the Secretary's report mentioned, but did not quantify, other benefits as follows:

"Among benefits attributable to traffic signal coordination improvements are reductions in vehicle operation costs, in traveltime for cars, buses and trucks, in the number of accidents, in emission of vehicle pollutants, and in conservation of fuel as a result of more efficient operation of vehicles. There will also be fewer noise peaks due to speed change cycles, more efficient use of police manpower due to improved traffic controls, and less need for construction and right-of-way acquisition due to better use of existing roadways."

Mr. Chairman, an additional fact that deserves mention is that the overall response by the States to requests from FHWA for the submission of projects authorized by the Traffic Control Signalization Demonstration Program has been impressive. As you know, project submission was limited by both the criteria established for the obligation of the \$30-million appropriation and the short time in which the States had to prepare and submit their proposals. Nonetheless, these criteria-compliance and time-frame limitations notwithstanding, projects were received by FHWA Washington Headquarters for funding in an amount approximating \$100 million, indicating an overwhelming desire on the part of the States to participate in this Traffic Control Signalization Demonstration Program.

Before concluding these remarks, I respectfully request that the Secretary's report dealing with the background, description, management, evaluation and future of the Traffic Control Signalization Demonstration Program be included in the formal hearing record of February 1 as an attachment to and together with this letter. In addition, Mr. Chairman, I invite your attention to the attached article entitled "Stretching the Streets of Ann Arbor" which describes the Ann Arbor traffic control system from conception to implementation and the benefits derived from its installation, and I respectfully request that it too be included in the hearing record as an attachment to this letter.

In conclusion, preliminary evaluations and estimates based upon previous traffic control experience indicate that substantial benefits can be realized from upgraded and coordinated traffic control systems. The traffic control provisions of H.R. 8648 will extend the program begun under the demonstration project to a far greater number of intersections and thereby yield much higher returns in both safety and cost benefits to the American public. Therefore, we strongly support these provisions in H.R. 8648 and urge early enactment of the legislation.

Respectfully submitted,

ARTHUR E. CAMERON.

Attachment.

THE TRAFFIC CONTROL SIGNALIZATION DEMONSTRATION PROGRAM—REPORT OF
THE SECRETARY OF TRANSPORTATION TO THE UNITED STATES CONGRESS PUR-
SUANT TO SECTION 146, PUBLIC LAW 94-280; DECEMBER 1977

INTRODUCTION AND BACKGROUND

Section 146 of the Federal-Aid Highway Act of 1976 authorized the funding of a program to demonstrate, through the use of technology not now in general use, that more efficient traffic operations on our Nation's streets and highways can be achieved through improved traffic signal control systems.

The purpose of a traffic signal is to allow two or more conflicting streams of vehicles (or pedestrians) to share the use of a common road surface—the intersection—in a manner more efficient than would be possible with control only by signs or regulations. A traffic signal informs motorists when they can legally enter and proceed through an intersection. Many drivers have come to recognize that, during times of heavy traffic flow, it is the traffic signal which allows them to proceed through the intersection more safely and with less delay than would be the case if no signal were present. However, during periods of light traffic flow, motorists are frequently frustrated by traffic signals that require stops and delays when no vehicles are present on the crossroad.

This frustration is compounded when the signals at closely spaced intersections are not being operated as a coordinated system but function independently. The resulting chaotic condition of much starting and stopping results in a very inefficient transportation system. Historically, safety needs and benefits have been measured by numbers of accidents, lives lost, injuries incurred and property value lost. Efficiency needs and benefits (which include safety) traditionally have been measured in terms such as capacity for movement, delays, stops and overall vehicle operating costs.

Since October 1973 and the Middle East embargo on oil, a new aspect has appeared in traffic control economics. Previously, fuel was a design consideration in terms of its cost but never in terms of its availability. Even in World War II, gasoline rationing was motivated more by the need to conserve rubber than to save fuel. But now, with a clearer view of a limited fuel reserve and availability, gasoline use is a critical element of intersection signalization design. It is estimated that only one-third of the traffic signals in urbanized areas of the United States are electrically interconnected to allow smooth, progressive traffic flow. An additional 20 percent of the signals are "time only" synchronized, a condition which requires frequent field checking and setting. Even when signals are fully interconnected, staff and budget limitations often preclude optimal operation and maintenance of the system.

The Federal Highway Administration for many years has been encouraging cities to make signal system improvements and has made Federal-aid highway funds (70 percent Federal participation in cost of project) available for the initial engineering, procurement, and installation of improved traffic control systems. Since 1972, computerized traffic signal control system projects having a total cost of \$60 million have been funded as Federal-aid projects. This does not reflect good progress. Unfortunately, cities have a great number of needs and their traffic signal control systems have not always received high priority. There seems to be a need to make decisionmakers at all levels of government more aware of the benefits to be achieved through utilization of modern traffic signal control systems.

Recognizing the needs, Congress authorized the Secretary of Transportation to carry out traffic signal control demonstration projects using technology not now in general use to increase the capacity of existing streets and highways, conserve fuel, decrease traffic congestion, improve air and noise quality and promote safety. Priority is to be given to projects providing for the coordination of two or more closely spaced intersections. Demonstration projects are not restricted to the Federal-aid system.

It is anticipated that the demonstration program and the results of these projects will act as a catalyst which will focus attention and provide current information on the effectiveness of various signal control improvements. This will lead to an increased use of regular Federal-aid funding by the States for improved signal control systems and a corresponding increase in energy conservation.

PROGRAM DESCRIPTION

The Economic Stimulus Appropriations Act of 1977 contained an appropriation of \$10 million to implement the Traffic Control Signalization Demonstration Program authorized by Section 146 of the Federal-Aid Highway Act of 1976 (P.L. 94-280).

On July 14, 1977, Federal Highway Administration regional offices were requested to submit candidate projects for this program along with cost data and priority ratings. A task force from several offices in FHWA Washington Headquarters reviewed the projects and the regional ratings and prepared a list of recommended projects meeting the program's criteria and goals. Criteria for project selection included:

a. Projects should be for acquisition, installation, and evaluation of control, detection, and communications elements of intersection traffic control systems designed to significantly improve traffic flow in networks, on one or more roads, whether on or off a Federal-aid system.

b. Priority should be given to those projects providing coordinated signalization of two or more intersections.

c. Projects must make use of technology not now in general use.

d. It should be possible to obligate project funds by October 1, 1977, and to undertake project construction without delay in order to provide employment opportunities at the earliest possible date.

e. The jurisdiction must agree on the required evaluation of the project to provide comparative data relative to the goals of the demonstration program.

f. Projects for which funds have already been obligated were precluded from consideration.

A total of 65 projects with a total cost of \$33.4 million were submitted by the regional offices. The projects covered 2,712 intersections in 35 States and the District of Columbia. These projects did not reflect the total need for traffic signal improvements, but constituted projects considered by the States and FHWA's division and regional offices to be of a high priority and meeting the requirement for prompt implementation.

Twenty-six projects in 20 States were selected to fit within the \$10 million funding limit (see Attachment A). These projects include about 1,600 intersections, grouped as follows:

1. Fifteen projects are minicomputer traffic signal control systems employing modern control strategies.

2. Eight projects make major use of state-of-the-art microprocessors for intersection and/or master control.

3. Two projects are "conventional" hardware for intersection control and master control elements but utilize modern technologies not now in general use for development of timing patterns, such as the off-line signal optimization program (SIGOP).

Twelve of these projects, with a value of \$6,044,000 are network systems involving 1,078 intersections. Network systems are characterized by being a group of closely spaced, interacting intersections, such as in a central business district of a city. The construction of these projects and the development of signal timing plans for them is very complex.

Fourteen projects are arterial street systems, consisting of a series of intersections along one major street. They will include 538 intersections and cost \$3,956,000. There is some indication that many of these arterial systems will provide even greater benefit to motorists than network systems.

Nearly half of the projects are in cities with less than 200,000 population. The 26 projects break down by city size as follows:

City size	Number of projects	Type of system	
		Network	Arterial
More than 1,000,000	3	2	1
500,000 to 1,000,000	5	1	4
200,000 to 500,000	6	3	3
50,000 to 200,000	7	5	2
Less than 50,000	5	1	4

PROGRAM MANAGEMENT AND PROGRESS

As of October 31, 1977, \$8,999,991.29 of the Fiscal Year 1977 \$10 million had been obligated. All of the authorized funds had been obligated for 22 of the 26 projects. The remaining four projects had some of the authorized funds obligated but full obligation will not occur until early 1978.

It is estimated that the 26 projects will employ a maximum of 300 people for a total of 1640 man-months.

PROJECT EVALUATION

The objective of the Traffic Control Signalization Demonstration Program is to improve the efficiency of traffic signalization, and therefore traffic flow, by the application of technology not now in general use. The results of these projects should encourage other cities and States to undertake similar projects under the regular Federal-aid program. Evaluations will be conducted as required by the Act.

Among benefits attributable to traffic signal coordination improvements are reductions in vehicle operation costs, in traveltime for cars, buses and trucks, in the number of accidents, in emission of vehicle pollutants, and in conservation of fuel as a result of more efficient operation of vehicles. There will also be fewer noise peaks due to speed change cycles, more efficient use of police manpower due to improved traffic controls, and less need for construction and right-of-way acquisition due to better use of existing roadways.

Preliminary estimates¹ indicate that the improvements made by these 26 projects, encompassing 1,600 intersections, will save motorists more than 11 million gallons of fuel annually or about \$7.2 million per year at \$.65 per gallon. This will result from motorists having to make 20 percent fewer stops, a conservative estimate.

In addition to fuel savings, it is estimated that automobile exhaust emissions will be reduced annually by 31 tons of hydrocarbons and 14,600 tons of carbon monoxide.

THE FUTURE OF THE DEMONSTRATION PROGRAM

Section 146 of the Federal-Air Highway Act of 1976 authorized a 2-year Demonstration Program. In addition to the \$10 million appropriated for 1977, \$20 million has been appropriated for Fiscal Year 1978 (Department of Transportation and Related Agencies Appropriations Act, 1978). Federal Highway Administration regional offices have assembled proposals for these monies. Project selection will be on the basis of criteria similar to those applied in the selection of the first round of projects. Factors to be used include the probable effectiveness of the project relative to initial and operating costs, the probable completion of the project in a timely manner, the probable adequacy of evaluation, and the probable completion of evaluation in a timely manner. Higher priority may be given to unique projects, with potential nationwide application, not providing for research or development but adequately reflecting the indicated ranking criteria.

STRETCHING THE STREETS OF ANN ARBOR

Attending a home game of the University of Michigan football team used to be like one of those good-news, bad-news jokes. The good news—at least if you were a Wolverine fan—was that the Ann Arbor team almost always won. The bad news was going home after the game. A Michigan home game normally attracts more than 100,000 spectators and 50,000 autos. When the fans climbed into those cars and tried to make their way through Ann Arbor's clogged streets, they created a monumental traffic jam with enough crunch and fury to rival the physical action on the gridiron.

But that was before Eagle Signal Corporation, an operating unit in Gulf+Western's Manufacturing Group, designed and built a computerized traffic

¹ Using estimates contained in "Statement on Traffic Control Signalization Program"—submitted to the Subcommittee on Surface Transportation, Committee on Public Works and Transportation, U.S. House of Representatives, September 29, 1975. Portions of that testimony were prepared by Mr. William Sacks, Traffic Consultant, Mansfield, Ohio.

control system for Ann Arbor that is now regarded as one of the world's most technologically sophisticated.

For Saturday afternoon football games, for example, the city formerly had to station 38 policemen at key intersections to handle the stadium's exit traffic. Normal traffic was not restored for up to an hour. Since Eagle's traffic control system became fully operational in 1976, it takes only two policemen and less than 30 minutes to return to normal traffic conditions.

Ann Arbor's improved traffic situation, of course, extends far beyond Saturday afternoons during the football season. On any day of the week, even during the heaviest rush hours, the city's traffic now moves more smoothly, delays have been reduced and bottlenecks are rare. The local police and traffic departments are no longer besieged by motorists' complaints, and both gasoline consumption and air pollution have been reduced.

Ten years ago, before Eagle Signal began installing the system, traffic in Ann Arbor (population: 105,000) was pretty much the same as in most American cities: a mess. The main arteries were frequently crowded, and the central business district, as described by a local traffic engineering official, was "a snarl characterized by a jam, followed by a series of stops and starts, leading into another snarl."

Annual traffic volume was rising at an average rate of 3%. Measures to correct the city's overtaxed traffic control system had been exhausted. The streets could not be widened to provide more capacity because additional right-of-way was virtually non-existent. On-street parking areas had already been removed, and the added capacity had been absorbed. The city could not afford to make wholesale construction changes, such as building new highways. As one municipal official put it: "We needed a street-stretcher, or a computerized system that could be linked to the gear already installed—traffic controllers at the intersections—and that wouldn't be prohibitively expensive."

Ann Arbor's traffic controllers were the conventional type seen all over the country—switching boxes mounted on poles that control how long the green and red lights stay on. Of the scores of controllers installed in the city, less than 10% were synchronized electronically. This meant that the overall traffic signaling and the ensuing traffic patterns were fragmented. As traffic patterns changed during rush hours, before and after football games, or when accidents occurred, there was no way to adjust the controllers, except to have traffic policemen at the intersections manually changing each one.

In 1966, the city government decided that a computerized traffic control system was needed to cope with Ann Arbor's mounting traffic control problems. The decision was to procure a system that provided full control of traffic from a centralized location and was fully automatic to respond to changing traffic demands. Although computerized traffic control systems were already on the market at the time, there were none sufficiently flexible or sophisticated to meet Ann Arbor's specific needs.

The city's engineers also decided on a "building block" approach to install the system—that is, building it in phases over a 10-year period. The idea was to be able to improve the system continually with limited expenditures, while identifying and solving specific problems that would have to be accommodated by the growing system. "The city wanted to be able to deal with both day-to-day and long-term changes in transportation growth, yet without scrapping existing on-street equipment," says an Ann Arbor traffic engineer.

Eagle Signal, one of four corporate contenders for the project, was selected to modernize Ann Arbor's traffic control system. The company had previously designed and installed more than 30 computerized traffic control systems, but none was as advanced as what Ann Arbor wanted.

In its current full-scale form, Eagle Signal's Ann Arbor system, which is called Comtrac® (for Computerized Traffic Control), contains two general-purpose mini-computers manufactured by Data General Corp. One controls traffic; the other processes data and serves as a backup for the other machine in case it fails or is accidentally shut down.

The brains of the system is a command center designed and built for unattended operation—although it is not uncommon to find engineers there keeping an eye on the Comtrac's display map. The display shows Ann Arbor's main streets and intersections and indicates the traffic and signal conditions of each one.

The Comtrac system's eyes and ears are a series of electronic sensors imbedded in the pavement at such critical points as main arteries and primary access streets. The sensors measure vehicular volume and lane occupancy, and this "intelligence" is fed into the central computer. A private line communications system links each intersection traffic controller with central control. The controllers were modified to accept electronic signals to vary green-light timing as determined by the computer.

As the sensors monitor the traffic at dozens of key points and feed the data to the computer, the computer calculates the appropriate control program to move the traffic most effectively. The computer instructs the traffic controllers as to the optimum timing for the lights, using either the pre-set software program or some special program that reflects unusual patterns.

Shortly after Ann Arbor's 10-year traffic control modernization program began, and again a year later, the Michigan Department of State Highways conducted studies on reductions in travel time for representative trips in the city and reductions in delays per run. The studies were conducted on Huron Street, a 2.5-mile stretch that is one of the city's main arteries. Traffic was monitored during the morning and afternoon rush hours, and at the height of the peak in shopping and business traffic.

Even before the computers were installed, the Highways Department estimated that there would be an average savings per trip of 18 seconds, and that the total delay per trip would be reduced by nearly half a minute. With the full system now operational, the Ann Arbor Traffic Engineering and Transportation Department reports that the savings run into minutes and longer, and that snarls and jams are relatively rare occurrences.

Without using concrete or asphalt, Eagle Signal has figuratively stretched the streets of Ann Arbor.

STATEMENT OF JAMES E. MARTIN, VICE PRESIDENT, OPERATIONS
AND MAINTENANCE, ASSOCIATION OF AMERICAN RAILROADS

Mr. Chairman and members of the Subcommittee:

I appreciate the opportunity to offer these additional comments for the record on the subject of Highway Safety.

I am James E. Martin, Vice President-Operations and Maintenance of the Association of American Railroads. The AAR is a voluntary, nonprofit unincorporated association whose member railroads operate about 97 percent of the trackage, employ 94 percent of the workers, and produce 97 percent of the revenues of all railroads in the United States. The AAR acts with and for its members in matters of common concern to the industry as a whole.

When I personally appeared before your Subcommittee on June 9, 1977, to testify on this subject, I outlined in considerable detail the interest of the railroad industry regarding highway safety, especially with regard to the railroad-highway grade crossing safety problem. The magnitude of the problem and efforts that are underway to solve it were discussed in detail. We believe that the present progress in this area is attributable to your efforts—in particular the provision for funds in both the 1973 and 1976 Highway Acts—which established specific funding for highway-rail intersection safety improvement.

We feel that the approach taken in H.R. 8648 will provide for continuation of this safety program. We are concerned and convinced that if the Administration's approach were adopted, as contained in H.R. 10578, the program would be seriously curtailed.

The program adopted in 1973 and 1976 had a dramatic effect upon the improvement of safety at highway-railroad grade crossing intersections. Figures 1 through 4 (attached) are examples of the effect this program has had upon the installation of motorist warning devices at highway-rail intersections on several Class 1 railroads. Similar increases have occurred on all major railroads. Figures 1 through 4 also illustrate the anticipated installations in 1978. These projects have already been selected, approved and some are already well underway.

Figure 5 illustrates the obligation by the states of Section 203 funds of the Federal-Aid Highway Acts of 1973 and 1976 for highway-rail intersection safety improvement projects. This curve represents a dramatic increase in the installation of motorist warning devices.

Figure 6 illustrates the reduction in fatalities which occurs when an aggressive highway-rail safety improvement program is pursued for a number of

years. The statistics shown are for the State of California which has had an impressive safety improvement program which pre-dates the Federal program by some 15 years.

The California program has produced a reduction in the number of people killed in train-vehicle collisions in excess of 50 percent. As a percentage of all highway fatalities the reduction exceeds 60 percent.

We are concerned that the 1978 Highway Bill proposed by the Administration would drastically curtail the highway-rail safety improvement program. Elimination of the category, as proposed by the Administration, would allow funds for highway-rail intersection safety improvements to be diverted to other purposes.

In effect, it would be a return to the situation which existed prior to 1973. At that time there were funds available from several Federal Highway Administration sources which were eligible for use on highway-rail intersection safety projects. But, as Figures 1 through 4 illustrate, they did not result in the installation of motorist warning devices at highway-rail intersections. We find it difficult to believe that crossing safety improvements would continue at their presently accelerating level if the Administration's approach were adopted. In fact we are convinced that the pace of highway-rail intersection safety improvement would return to approximately its pre-1973 level.

Furthermore, it has taken some time to get this program into high gear. Institutional barriers, both within the states and within the railroads, had to be overcome. Procedures had to be established. Contacts between states and railroads had to be nourished. Personnel had to be hired and trained to a high level of technical expertise.

The signal suppliers had to expand production capacity in order to meet the increased demand. Inventories had to be built. Diagnostic teams had to be formed and high hazard crossings identified and evaluated. Engineering design had to be done. All of this highly technical infrastructure had to be developed. It now exists and is functioning well, but its continuation depends upon assurance of a long-range program. The Department of Transportation's 1972 Report to Congress on Highway-Railroad Safety recommended a 10 year program. A major change of direction, or a reduction in the magnitude of the program, will cause a serious disruption and a pull-back in the commitment of the major participants.

Finally, I note that the Administration proposes to retain a special category for highway beautification and junkyard control. It is difficult to understand why that program is of greater importance to the motoring public than highway-rail intersection safety.

There is another topic which I would like to bring to your attention. As you know, there is a serious bridge problem in this country. Recognizing this problem, Congress created the Special Bridge Replacement Program in the Federal-Aid Highway Act of 1970. This program is designed to assist in the replacement of bridges which are structurally deficient or functionally obsolete. Both H.R. 8648 and the Administration bill make the rehabilitation of bridges eligible for funding, and increase the funding authorization for this program. We are certainly supportive of that effort.

Under present law, highway bridges over railroads are eligible for replacement (and would be eligible for rehabilitation under the proposed amendments), but railroad bridges over highways, which perform the same traffic flow and safety functions, are not eligible. Whether the highway is over or under the railroad is primarily a function of the topography at the particular site. Many of these bridges were built by the railroad at the request of the state years ago and are now dangerous because they are too narrow or because the overhead clearances are too low for today's automobile and truck traffic. In some cases, four-lane highways are reduced to two lanes in order to pass under these bridges, and then expand again to four-lanes.

Replacement or rehabilitation of these railroad bridges over highways is of little or no benefit to the railroad, but would be of great benefit to highway users. Their replacement or rehabilitation should be equally eligible for funding. We urge that the language of H.R. 8648 be modified so that railway bridges over highways are eligible for the special bridge replacement program as are highway bridges over railroads.

We sincerely appreciate this opportunity to express these additional comments on highway legislation. Dialogue such as you have fostered bolsters our conviction that responsible and meaningful highway safety programs will continue to be enacted. Thank you.

FIGURE 1: Rail-Highway Traffic Warning Device Installations on the CHESSE SYSTEM Including C&O, B&O, WM, and B&O CT.

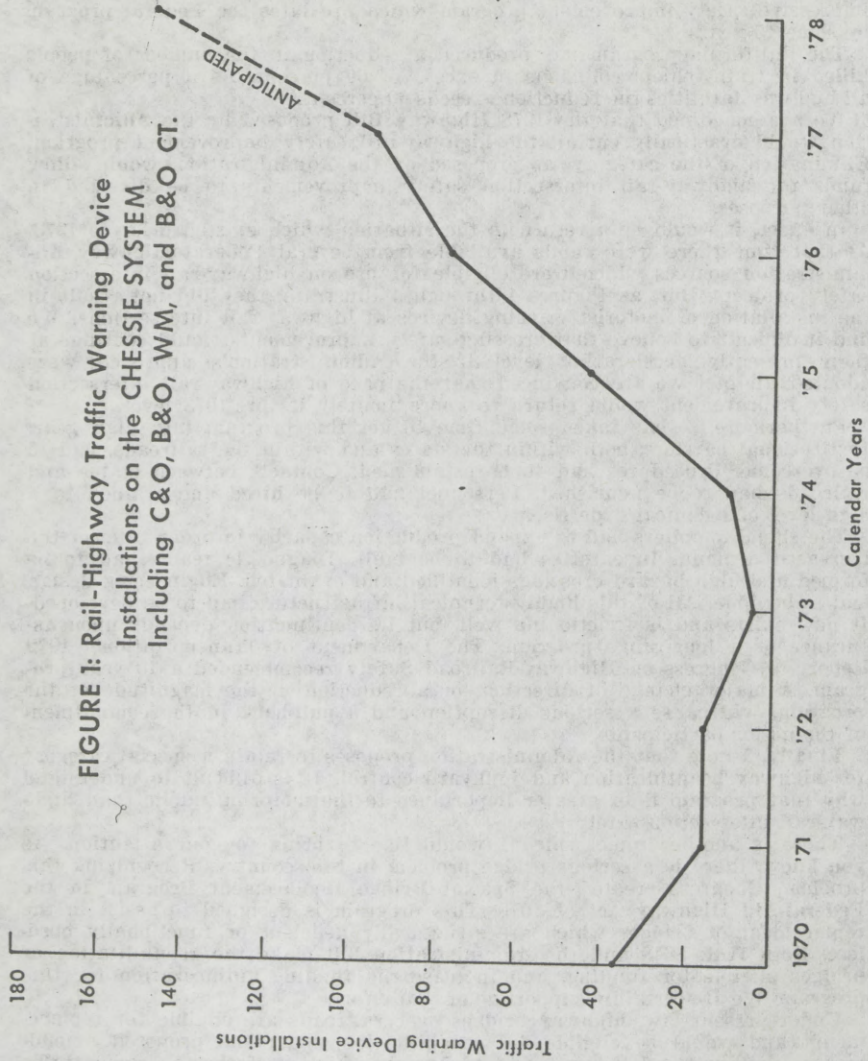


FIGURE 2: Rail-Highway Traffic Warning Device
Installations on the UNION PACIFIC

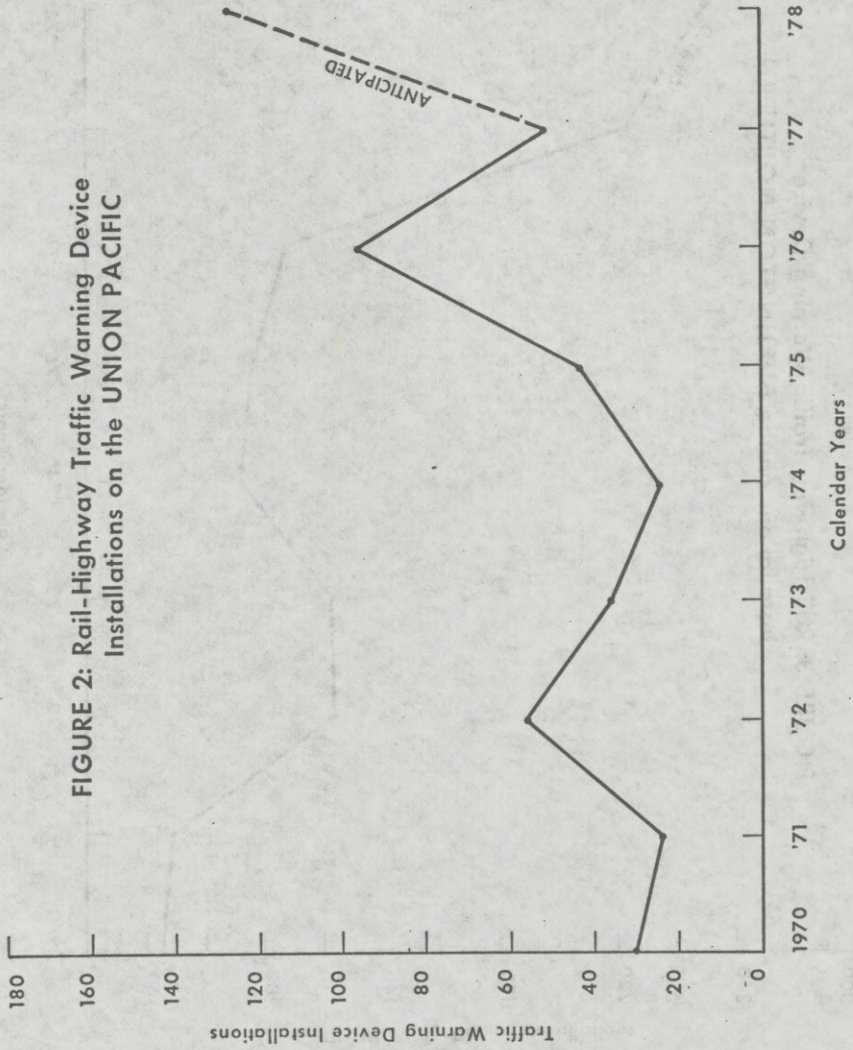


FIGURE 3: Rail-Highway Traffic Warning Device
Installations on the BURLINGTON NORTHERN

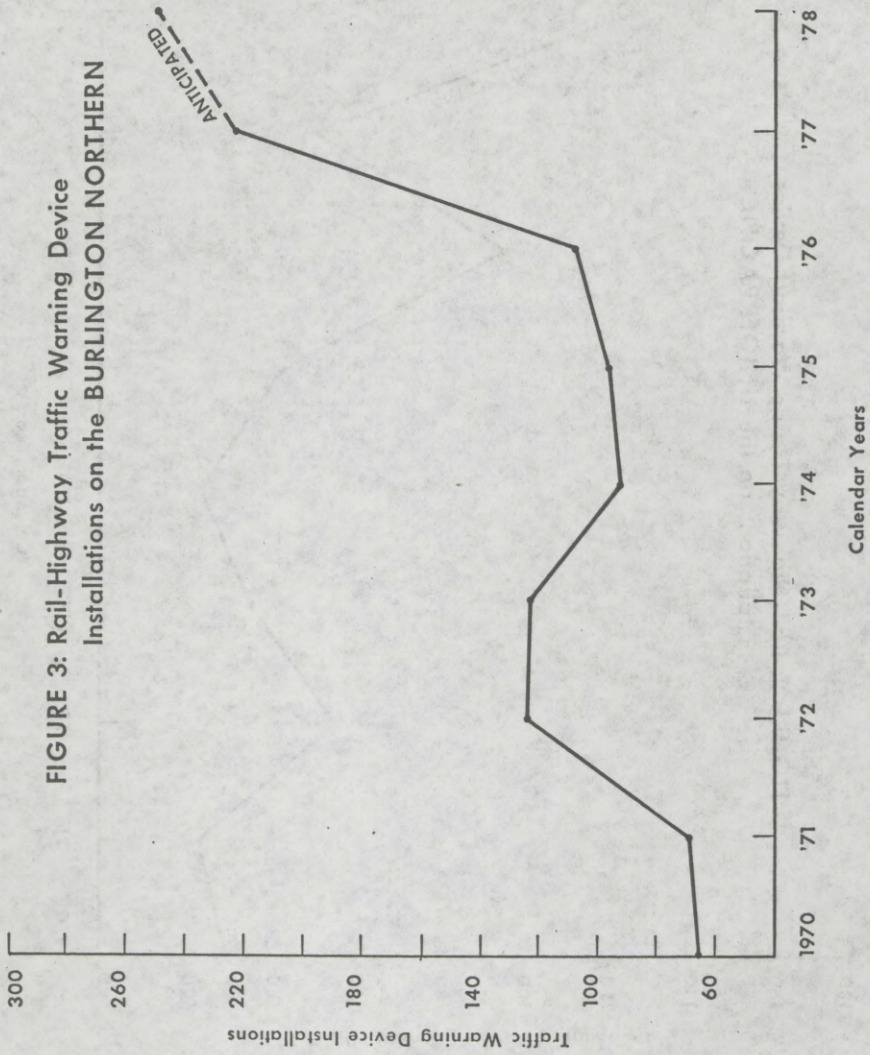


FIGURE 4: Rail-Highway Traffic Warning Device
Installations on the SOUTHERN RAILWAY

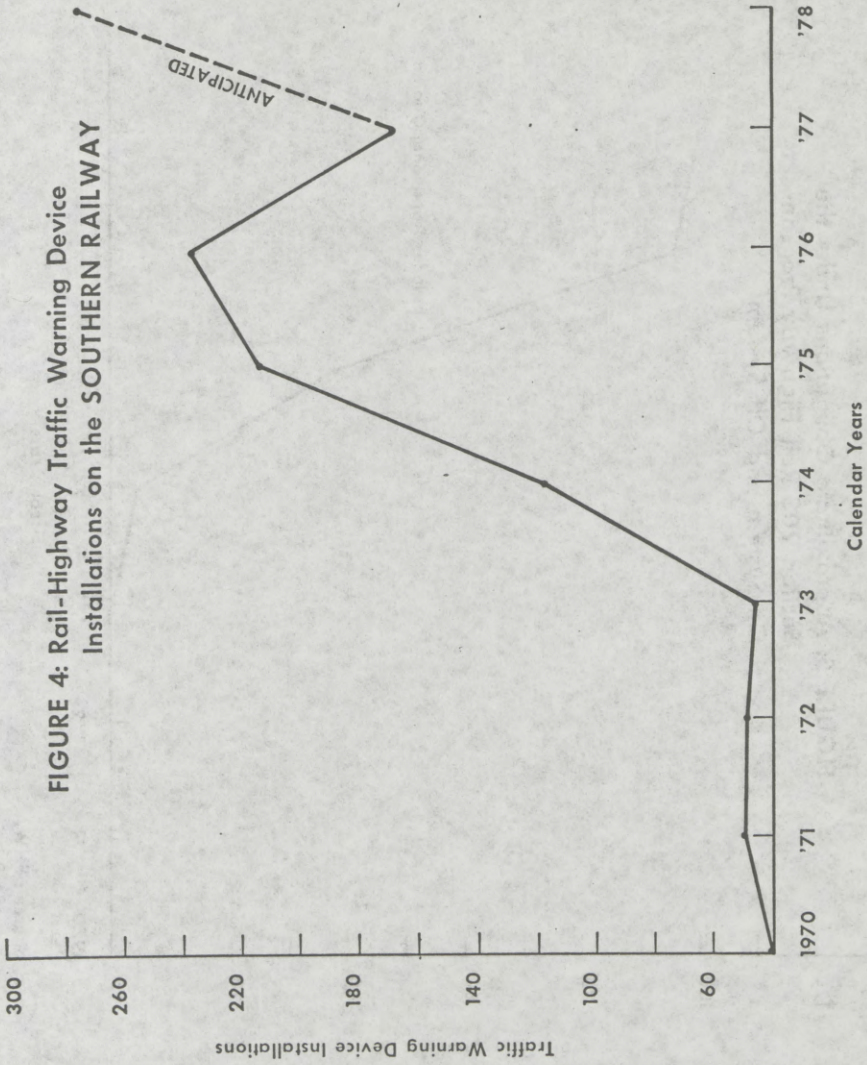


FIGURE 5: Approximate Obligations Under the
Section 203 Rail-Highway Program,
On System and Off System

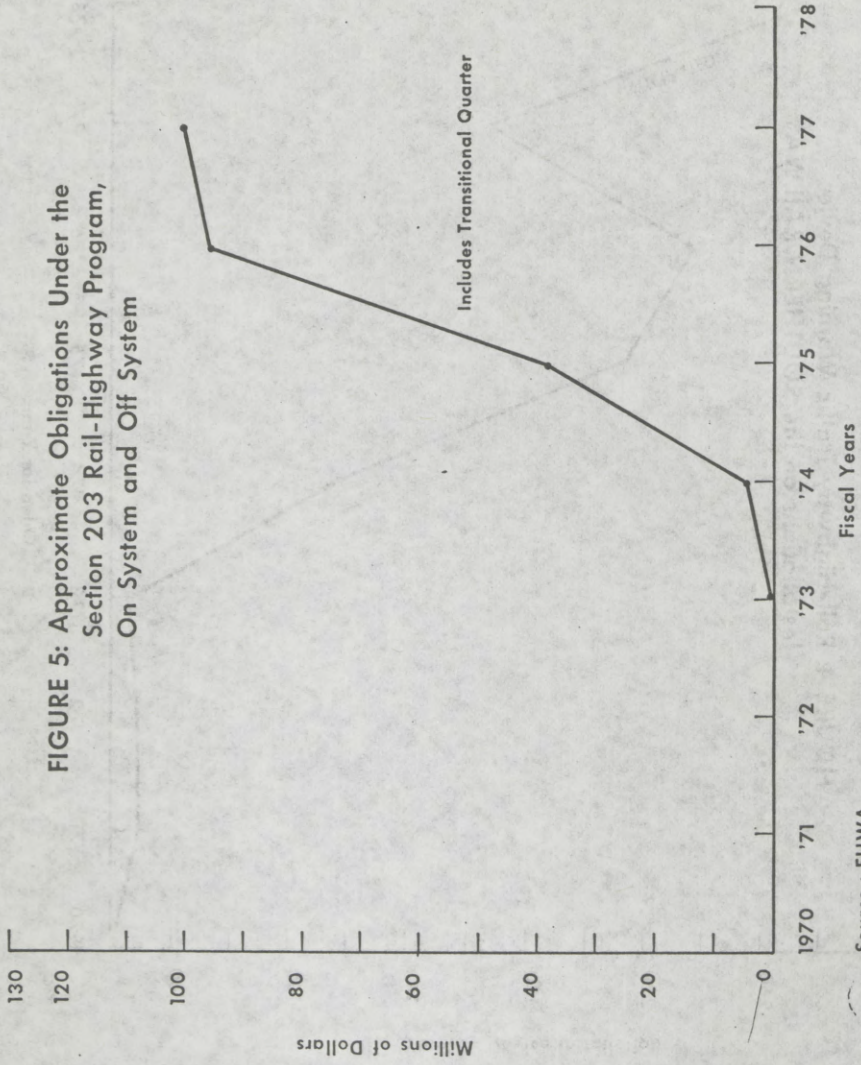
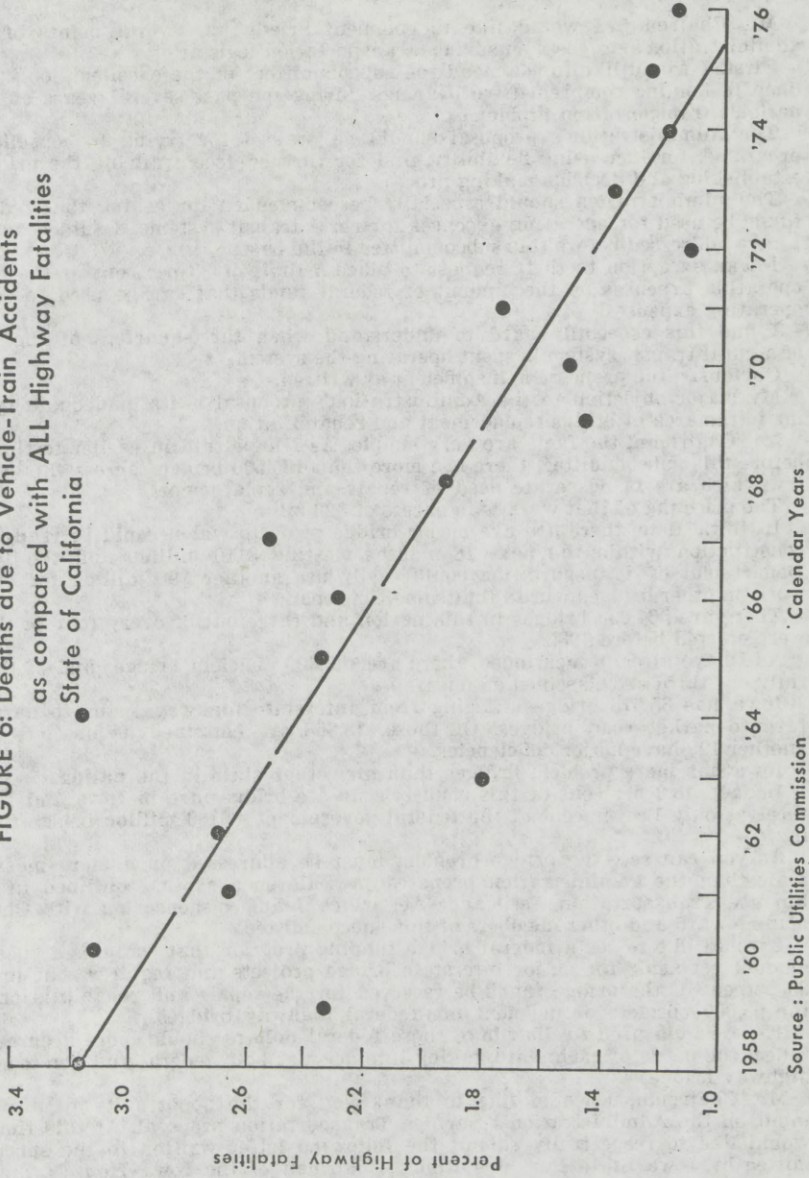


FIGURE 6: Deaths due to Vehicle-Train Accidents
as compared with ALL Highway Fatalities
State of California



STATEMENT OF CONGRESSMAN MICHAEL T. BLOUIN

Mr. Chairman, I would like to comment briefly on several points of the administration's proposal on surface transportation legislation.

First, I would like to commend the subcommittee for the excellent job it has done in holding comprehensive hearings during the past several years on this nation's transportation problems.

The Administration's proposal should be praised for trying to consolidate programs, for increasing flexibility, and for further decentralizing the priority establishing and decision-making processes.

The administration should especially be commended for asking that federal funds be used for operating expenses for rural transit systems, a subject which I have addressed before this subcommittee in the past.

I take exception to their request to place a limit of 33 per cent of the total operating expenses on the amount of federal funds that can be used to cover operating expenses.

I find this especially hard to understand when three-quarters of the cost of a rural transit system is spent operating the system.

Obviously, the proposal is insufficient as written.

My major objection to the Administration's proposal is its inadequate funding in the area of bridge replacement and rehabilitation.

Mr. Chairman, the facts are very simple. As I have said in earlier testimony before this subcommittee, there are more than 105,500 bridges across this country which are in desperate need of repair and replacement.

The price tag of that work is in excess of \$23 billion.

In Iowa alone there are five major bridge projects which could be ready for construction within the next 18 months, costing \$110 million and the Iowa Department of Transportation could easily use another \$90 million for other work on other bridges within that same time span.

There are 564,000 bridges in this nation and three out of every four of them were erected before 1935.

As I have already mentioned, there are 105,500 deficient bridges and of those fully one-third are classified as unsafe.

Iowa has 35,578 bridges ranging from Interstate highway spans to narrow farm-to-market road bridges. Of those, 13,868 are classified as obsolete and another 129 have major deficiencies.

Iowa has more problem bridges than any other state in the nation.

In fact, 13.3 per cent of this country's unsafe bridges are in Iowa and Iowa receives only 1.9 per cent of the federal government's \$180 million bridge funding.

As you can see, the bridge problem must be addressed on a more massive scale than the administration proposes; a scale such as that outlined in the Surface Transportation Assistance Act which I am co-sponsoring with Chairman Howard and other members of this subcommittee.

I would like to see a federal bridge funding program that contains a specific amount set aside for major interstate bridge projects and requires that up to 30 percent of the bridge funds be reserved for the repair and rehabilitation of the 65,000 obsolete or deficient non-federal highway bridges.

The formula used to distribute those federal dollars should more accurately reflect the needs of each state, taking into account both federal and non-federal highway bridges.

Mr. Chairman, I would like to thank you for the opportunity to provide input on the Administration's Surface Transportation proposal. At this time I would like to respectfully submit the following letter written to the subcommittee by Iowa State Rep. Joe Rinas, Chairman of the Iowa House's Transportation Appropriations subcommittee, and his fellow lawmaker, Rep. Fred Koogler.

HOUSE OF REPRESENTATIVES,
STATE OF IOWA,
Des Moines, Iowa.

GENTLEMEN: We are heartened by the fact that the Carter Administration has chosen to recommend increased Federal Appropriations for Bridge Replacement and Rehabilitation. We are further heartened by its (Carter Administra-

tion) recommendation that up to 30% of those appropriations may be designated for off system roads.

However we have fears that the \$450,000,000 annual recommendation still falls far short of adequately addressing the problem. In consulting with officials of the Federal D.O.T. we have been informed that they have based their \$450 million recommendation on the assumption that the states design capabilities would make it impossible to expand more than \$450 million on Bridge R&R in any given year. It is our opinion that this assumption is patently absurd. Iowa's D.O.T. when surveyed by the Federal DOT concerning design capabilities, projected that within 18 months they would be able to let construction contracts for over \$100 million in Bridge Replacements. That projection was based only on major (\$10m+) Bridge projects within Iowa's 10,000 mile Federal Aid Primary System and didn't even address primary projects on our 15,000 mile Federal Aid secondary system. Furthermore we weren't even requested for design capabilities concerning Iowa's 65,000 miles of off system roads. We are well aware of the Iowa D.O.T. reputation for efficiency but we never anticipated it alone reflected 20% of the Nation's design capabilities and of course it doesn't.

Current cost estimates for replacing or repairing all unsafe bridges indicate between 20 to 30 billion dollars will be necessary. With current inflation rates the \$450 million Administration Recommendation won't even cover the annual impact of inflation on those cost estimates.

In view of this inadequacy in funding we respectfully submit the following recommendations:

1. Federal R&R money be made available for a total on-system and off-system inventory of Bridges and that such a study be utilized as a basis for distributing R&R funds amongst the states.

2. At least \$1,000,000,000 be made available during the first two years of the four year allocation and \$2,000,000,000 be made available for each subsequent year.

3. That states D.O.T. be allowed to use their discretion in allocating monies to on-system or off-system projects.

Respectfully Submitted,

B. JOSEPH RINAS,
State Representative.
FRED KOGLER,
State Representative.

STATEMENT ON BEHALF OF THE COMMONWEALTH OF KENTUCKY,
DEPARTMENT OF TRANSPORTATION

(By Calvin G. Grayson, Secretary)

Mr. Chairman, my staff and I have given considerable analysis to the Carte Administration transportation legislative proposal known as H.R. 10578. In general, we are in agreement with most of this legislative proposal. The features dealing with the completion of the Interstate, making the 3R Program permanent, combining funding categories, allowing 50 percent of each apportionment to the states' primary urban highway and small urban and rural transportation areas to be used for one or both programs, and the establishment of a consolidated highway and transit planning category of funding are all moves in a direction to provide a better transportation program for this nation and its states. As with any piece of legislation which is introduced having this much impact, there are several things contained in this bill that I would consider extremely important. The balance of my statement will clearly show the position of the Commonwealth of Kentucky, Department of Transportation, on these issues.

INTERSTATE

Our analysis of the Administration's proposal on the Interstate System indicates the strong desire on the part of the Administration to complete the Interstate System within a reasonable time span. The legislation makes this evident in several areas, and I agree with the overall philosophy on completion of the Interstate as well as many of the techniques written into this legislation which

will ultimately bring the completion about. By cutting the obligation period from four (4) years to two (2) years after the original apportionment and allowing the unused funds to be made available to other states, who have projects ready for construction, and by providing that any Interstate project not having a completed EIS by September 30, 1982, or not having a portion of an Interstate project under construction by September 30, 1986, that project will be eliminated from the system, the Administration points out the seriousness of its commitment to complete the Interstate System. In addition to these points mentioned, the proposal also would apportion 50 percent of the Interstate funds based on the formula to complete essential gaps. This should provide a significant step toward completion of essential gap projects within the system.

Section 301 (Interstate Transfers) dealing with withdrawals of sections of the Interstates indicate that the Secretary USDOT *cannot* redesignate the withdrawn mileage. Under the current Act of 1976, the Secretary can redesignate mileage to another area, and I would strongly favor a continuation of this policy. The Interstate System was initially designated in 1965, and since that time considerable changes in many states have occurred which create a necessity for either elimination of parts of the original Interstate System or, on the other hand, additional mileage to avoid congested urban development or to serve unanticipated growth or industrial development which was not originally anticipated. The necessity for additional mileage is just as strong in some areas as the necessity for elimination in other areas.

The 3R Program, "Resurfacing, Restoration and Rehabilitation," should be made a permanent program as recommended by this legislation. However, the funding levels proposed would allow Kentucky a \$3 million apportionment when our needs range from \$10-20 million a year at this time. Sections of the Interstate System, such as I-75 in Northern Kentucky which was completed in the early 1960s, have experienced extremely heavy traffic volumes, much greater than anticipated when originally designed. Kentucky now faces a major restoration project on I-75 that will cost \$1 million plus for each mile. This along with deterioration of the remaining Interstate will require much greater funding than is currently proposed. The funding for this program should be greatly increased if it is expected to have the effect intended by the Congress.

PRIMARY

The combining of categories and the flexibility allowed by transfers of up to 50 percent of the apportionment between one or both programs should provide states with the flexibility for which they have been asking many years. However, the funding levels recommended in the legislation are not large enough to deal with the many problems which the primary system faces today. In fact, by combining the four categories under the primary system, the Administration's proposal is actually recommending a funding level below the current program. The current funding level is \$1.585 billion as opposed to the recommended 1979-80 level of \$1.5 billion. The need for increased funding in this area is great and should be addressed by this Committee.

The Administration's proposal to standardize the federal share payable to 80 percent is very favorable, in my opinion. If it does nothing more than eliminate the confusion that now exists over the funding levels on different categories of projects, it will serve a very useful purpose. In addition, it will eliminate the need for states and local communities to make trade offs between different programs based simply on the federal funding ratios.

SMALL URBAN AND RURAL TRANSPORTATION SYSTEMS

The combining of categories and the additional flexibility provided by this new category of funding is supported by KYDOT. I would comment, however, that Section 405 leaves unclear the status of the Federal Air Secondary System. I cannot support an elimination of the secondary as a system of roads. I have been advised by the Federal Highway Administration that this is not the intent of the legislation.

We would caution that care be taken to assure that the same regulations used in urbanized (3 "C") areas are not imposed on the statewide planning process.

We would also recommend for transit funding that all references to "capital" be deleted. This would then permit the use of regular funds for operating expenses, thus allowing the purchase of transportation services when this option is more economical and desirable.

URBAN HIGHWAY PROGRAM

The proposal for this category is generally acceptable since it allows for more flexibility in the utilization of funds. It will be our recommendation that all reference to "capital" be deleted under this section for the same reasons as stated under the Small Urban and Rural Transportation Systems' comments.

The legislation proposes direct funding to urban centers with a population of one million plus. We are *opposed* to this part of the legislation. We believe that it would be virtually impossible to establish an effective program in these urbanized areas that could reasonably be coordinated beyond the boundary of the area. A local urbanized government is concerned only with the citizens and boundaries designated for its jurisdiction and rightly so. However, the proposal to provide direct funding would place them in a position of needing to consider regional and state matters since the decisions they would be making could have a broader effect than their local jurisdiction. For example, in Kentucky we are currently working on a project called the Jefferson Freeway primarily amounts to an outer beltway around the City of Louisville. The effects of this beltway are well known to surrounding border counties since industrial and commercial facilities generally develop around such transportation facilities. In addition, this beltway, if extended across the Ohio River to an Interstate highway spur in Indiana, would provide the Louisville metropolitan area with an outer roadway that would allow Interstate traffic to bypass the highly congested urbanized area. This means then that a drastic accessibility change would occur not only for the City of Louisville but for all the surrounding counties and the States of Kentucky and Indiana. It is not logical to give complete control of the decision-making process to an urbanized area when the programs they will be controlling have a much broader effect on a regional or state basis. The Federal government in dealing with state and inter-state problems has previously recognized this.

Furthermore, it is our opinion that the states have the responsibility for a statewide and regional transportation system. Within the urbanized areas, we have certain highways that are on the state system. We are responsible for maintenance and operation of these projects. It does not seem to be realistic to appropriate funds to a governmental body for improvement to a facility that is not their responsibility. I am of the opinion we should continue under the present mechanism for recipients of these funds. When the planning process identifies projects for improvement that are not on the state system, the funds are given to the local government agency for implementation. In Kentucky we have had very good experience with this sort of procedure. I know of no reason to change it. If the states are to keep the responsibility for providing a statewide and regional transportation network, then they should be given tools to implement the responsibility. One of these tools is the financial apportionment from the Urban Highway Program.

We feel that this is a very important issue and would hope that very serious consideration will be given to it.

SPECIAL BRIDGE REPLACEMENT AND REHABILITATION PROGRAM

Perhaps the most serious problem facing the highway mode of transportation is the bridge problem. With increasing traffic volumes and high weight loads, the structures around this country are rapidly deteriorating. We feel that everything must be done to step up the pace of repairs and replacement of these bridges. The Administration's proposal, in our opinion, provides a fairly realistic funding level, but it does little to encourage growth in the construction industry which is now poorly equipped in many areas to respond to this problem. We must show industry that there is a firm commitment to this program by making it clear that future funding levels will indicate a progressive program, one that is worthy of substantial investment in new capital. The Administration's proposal provides for substantial increase over the currently \$180 million funding level, however, it stopped short by providing for

only inflationary increases in the next four years. We estimate that inflation will cost \$25-50 million a year at these funding levels.

KYDOT recommends a yearly increase in this program that will encourage a build-up of industrial capability as well as allow time for project development. We would recommend a funding level of \$450 million in 1979, \$550 million in 1980, \$650 million in 1981, and \$750 million in 1982. We believe that these funding levels would encourage industry growth and at the same time allow for states to begin building their capability to handle projects in this area.

This legislation allows for 30 percent expenditure off-system. We endorse this proposal and agree with the language that will allow rather than require. In this manner the states can set their priorities according to needs and the 30 percent should adequately cover off-system needs.

We also endorse this legislation in its effort to provide for rehabilitation of inadequate bridges. In the past we have been allowed to only replace a structure which severely limits our ability to deal realistically with the bridge problem.

We would recommend very strongly that the legislation be written to allow the use of bridge replacement and rehabilitation funds for related project costs, such as utility movements, additional right-of-way, and extension of approaches. A recent FHWA Task Force on Red Tape recognized this problem and has recommended that these costs be allowed. We believe that the legislation should specifically state that these costs are allowable.

CONSOLIDATED PLANNING FUND

We endorse the legislation proposal to consolidate highway and transit planning funds into one category. We oppose the portion of legislation in this category for grants under this section to urbanized areas over one million in population to metropolitan planning organizations. In order to insure that regional and statewide transportation systems are effective and integrated with the urban transportation systems, the administration of these funds should be in accordance with present procedures whereby they are the states' responsibility. Under the present procedures the state reviews the work programs of the MPO's to insure that they are compatible with regional and statewide needs. This has worked well in Kentucky, and I am of the opinion that to change would be detrimental to the regional and statewide transportation systems. We also object to the portion of this legislation directing the metropolitan planning organization of urbanized areas over one million population submitting their program for projects to the Secretary USDOT with the state only being given an opportunity to review and comment. It is our opinion that the state should recommend the planning work program and any improvements on the transportation system in urbanized areas prior to the expenditure of Federal funds. This will insure that the expenditure of Federal funds in urbanized areas are compatible with regional and statewide needs in transportation systems. To do otherwise may result in transportation networks of an urbanized area that is not compatible with the outlying regions and state.

FORMULA GRANT PROGRAM FOR URBANIZED AREAS

Section 502 provides a new formula for distributing Section 5 funds that includes system characteristics which apply only to large urbanized areas. Primarily rural states such as Kentucky stand to lose a considerable amount of funding if this formula is approved. KYDOT recommends retention of the current formula which bases the state's apportionment on 50 percent ratio of population of the urbanized area to the total population of all urbanized areas, and 50 percent on a ratio of population in urbanized areas with a weighted factor based on density. Two new factors contained in the proposed legislation are completely unrelated to most rural states such as Kentucky. They call for consideration of commuter rail train miles operated in an urbanized area of which there are very few miles in rural states, and also calls for consideration of fixed guideway systems in urbanized areas of which there are very few in rural areas.

An alternative formula which could be considered as a compromise would be to provide funding based on 65 percent population characteristics and 35 per-

cent system characteristics (bus replacement—25 percent and fix guideway—10 percent).

I appreciate the opportunity to present my thinking on H.R. 10578 for the record and I can assure you that KYDOT will be watching closely future developments on this legislation.

STATEMENT OF THOMAS D. MORELAND, COMMISSIONER, GEORGIA
DEPARTMENT OF TRANSPORTATION

Mr. Chairman and Members of the Committee: The Georgia Department of Transportation furnishes for your consideration the following comments on the Administration's "Highway and Public Transportation Improvement Act of 1978."

Georgia's concern for the early completion of the Interstate Highway System was so great that the construction of the remaining rural gaps in our originally designated Interstate mileage was prefinaanced from State funds. The Administration has proposed that Interstate apportionments be divided between the Federal Highway Administration's designated essential gaps and the cost to complete the entire system. Not only would this severe penalty result in our inability to construct critical projects in the Atlanta area and throughout the state in an orderly time fashion, but we would also be penalized by not being able to reclaim those state monies expended to prefinaance the construction of our rural gaps.

A much better provision to expedite completion of the Interstate System would be to allow states to use their own funds to prefinaance the completion of the system and then to allow them to reclaim not only the amounts expended but interest required for the prefinaancing process.

The Administration proposes that the Environmental Impact Statements for all segments be completed by September 30, 1982 and all segments be under contract by September 30, 1986. Georgia supports these provisions if funds are made available. The Administration also proposes that funds be available for two years after apportionment and funds not used by a state in that period will become available to other states for use on critical projects. Georgia supports the concept of the two year apportionment principle. These requirements in themselves will provide for an early completion of the Interstate system without resorting to the "essential gaps" scheme contained in the Administration's proposal.

This state is also concerned about the rehabilitation, restoration, and resurfacing (3R) of its Interstate System and supports a permanent program funded at a higher level than the Administration's recommendation and with the use of 80% Federal funds. While we agree that vehicle miles of travel is a most appropriate factor to be included in a state's apportionment of these 3R funds, we also support the inclusion of a truck usage factor in the apportionment formula.

In numerous instances the Administration bill suggests that the Federal Government deal directly with local governments. This will undermine the successful Federal/State relationship experienced historically in the area of highways. It will also make it difficult for the state to act in concert with local and Federal governments to focus resources to the maximum degree on the most acute problems.

The Administration bill requires land use planning at the state level as a prerequisite for using Federal funds. This usurps the prerogatives of Federal, State and local officials and places in the hands of planners those responsibilities vested in elected public officers. It virtually creates another level of government.

Georgia is concerned about the magnitude of the bridge replacement and rehabilitation problem. We support the funding of this program at approximately a half billion dollar level and the Federal matching share of 80%. The non-Federal-aid system bridge and road problem is so grave that over sixty million dollars by the end of this Fiscal Year and an anticipated sixteen million dollars in Fiscal Year 1979 will be expended in State funds to alleviate the problem. Georgia welcomes the Administration's proposal for funding 30% of bridge funds for bridges not on the Federal-aid system. Due to declining state revenues, the non-Federal-aid program needs to be funded at an increased level.

The Administration's proposal combines several categories of funds and allows major transfers between these categories. Georgia supports the reduction in categories and the more flexible use of funds to apply resources to address most needed projects.

This state's transit program is a valuable asset to our total mobility. Any reduction in formula funds for our transit operations throughout the state would severely reduce our ability to provide mobility for a large segment of our population. The proposal to include commuter miles and miles of fixed rail system as factors in the formula for transit funds is totally unacceptable.

The opportunity to make this statement is appreciated and this concludes our testimony.

AMERICAN ASSOCIATION OF STATE HIGHWAY
AND TRANSPORTATION OFFICIALS,
Washington, D.C., February 6, 1978.

Hon. JAMES HOWARD,
*Chairman, Surface Transportation Subcommittee of the House Public Works
and Transportation Committee, House Office Building, Washington, D.C.*

DEAR MR. CHAIRMAN: On behalf of AASHTO, I would like to submit, for the record, our comments regarding the Administration's proposed Highway and Public Transportation Improvement Act of 1978, as contained in H.R. 10578.

You, and the members of your Committee, Mr. Chairman, are to be commended for your past leadership in bringing about the Federal-aid Highway Program, where State and Federal officials have worked together in partnership to develop a network of roads and streets which are the backbone of the American economy and lifestyle. The mobility afforded by highways provides freedom of choice for residential, commercial, and industrial location, broadens employment and educational opportunities, enables people to travel quickly and inexpensively to scenic, historic, and recreational areas, and permits the rapid and economic shipment of goods and produce.

However, the nation's transportation systems are at a crisis point. While much emphasis is being placed in the need to find adequate funding for public investment in transportation, the crisis also relates to concerns about energy, inflation, pollution and productivity. Institutional arrangements involved in the planning, development and operation of transportation systems should be made to work more efficiently in their use of resources in support of environmental enhancement and related national goals.

AASHTO believes that the highway, rail and public transportation systems should be developed as part of an overall national transportation program covering all modes of transportation, and that all transportation programs should be flexible enough to permit individual States to implement programs which best serve the needs of their respective States, and areas within the State, while still addressing National goals and objectives.

State departments of transportation and highways assume various roles in public transportation, including:

- a. Administration of operating assistance programs in both urbanized and nonurbanized areas.
- b. Providing matching grants for a wide range of Federal programs.
- c. Conducting technical studies and services.
- d. Collecting and analyzing transit operating and financial data.
- e. Operating transit systems.
- f. Planning assistance.
- g. Undertaking a wide range of transit-related activities and programs not under the sponsorship of, or funded by, the U.S. Department of Transportation.

Most importantly, States, through their transportation departments, offer the most logical means of coordinating and determining the transportation needs of the State. The Federal-State-Local order must be preserved to effectively coordinate public transportation programs.

As an example of the rationale of this order, AASHTO has identified over 875 transit systems providing regularly-scheduled service (over 250 are in areas of less than 50,000 population.) There also exists thousands of additional transportation providers as part of the multitude of Federal programs

for which transportation service is provided. These programs include comprehensive employment and training programs, community action programs, nutrition programs, social services for low-income and public assistance recipients, rehabilitation services and facilities-basic support programs, community development block grants, and a number of others.

It would appear obvious that the Federal government could best coordinate public transportation programs by working directly with 50 States, rather than individual local units of government or transit systems. AASHTO believes all Federal transportation funds, except for directly-administered federal programs, should flow to the States, with only the States having the authority and flexibility to transfer funds among various transportation programs to meet priority transportation needs of the State and its units of local government.

Specifically, States should have a major role in the administration of operating assistance and routine capital grants.

Only in cases where State law specifically provides for the transfer of responsibility directly to an operating agency or local unit of government should the Federal government deal directly with other officials.

AASHTO has estimated the total urban and rural public transportation funding needs in the country as \$33.5 billion over the next five years. Total federal funding needs over this period are estimated at \$22.8 billion, which are broken down into \$16.0 billion for capital requirements, and \$6.8 billion for operating requirements based on the current nominal Federal to local matching ratios of 80/20 and 50/50. These needs are preliminary estimates from transportation improvement programs (TIP) resulting from the ongoing transportation planning process in the nation, and serve to illustrate that, as in nearly all transportation modes, the needs far exceed the available resources.

AASHTO is opposed to the proposed designation of Metropolitan Planning Organizations in urbanized areas over one million population as direct recipients of Federal-aid highway and transit transportation capital and planning funds. This action could only lead to fragmented planning within a State, and serve to alienate the urbanized area from the rest of the State. A trend would also then ensue for smaller urbanized areas to become direct recipients of Federal-aid.

The Department's proposal, in our view, is trying to bring about a change in the basic philosophy that has generated the Federal-aid highway program over the years into one of the most successful Federal-aid programs. That success has been due to a program that has, at its basis, a Federal-State partnership relation.

The U.S. Department of Transportation is suggesting that in urbanized areas of one million and over, that the Secretary deal directly with Metropolitan Planning Organizations. Such would be the conduit for the direct allocation of urban highway funding without regard for those relationships so clearly established in the Constitution of the United States. This also creates statutory and constitutional problems to several of our member States. For example, Section 33.1-12 of the 1950 Code of Virginia, as amended, vests authority for transportation planning with the Virginia Highway and Transportation Commission. Title 33.1, of the Virginia Code, similarly vests the Commission with the authority for implementing transportation plans on behalf of the Commonwealth. No other agency has been vested by the General Assembly with this authority, nor is the Governor given the broad power to designate agencies to perform these functions. It, therefore, is evident that the Department of Transportation is suggesting that the Governor perform an action beyond his Constitutional Authority.

The proposed legislation goes further to require that a Metropolitan Planning Organization, for an area with a population in excess of a million, submit its transportation plan and its transportation improvement program to the Secretary of Transportation for review and approval, as a condition of receiving Federal assistance.

In the past, the Secretary has only approved the planning process. Now, the Secretary will have to review the program in depth to see if proper consideration has been given, not only to transportation needs, but air quality, energy conservation, environmental quality, accessibility to employment, effect on mi-

norities, housing, land use, and future development. In other words, the Federal Government would assume the State's superintending role, and would greatly expand the Secretary of Transportation's role over land use development in those areas.

At a recent meeting during the discussion on this subject, one of our members made the observation that we started out as a Federation of States, and through our Constitutional process we became a Union titled, "The United States of America," and now it looks like we will have to call it "The United States of America plus twenty-five Urbanized Areas."

We feel that the States should not be bypassed, otherwise rational State-wide system planning and development is hampered. It is essential that Federal-aid highway funds be applied to a priority system. These are the routes that represent one-quarter of the mileage in the United States, but that carry three-quarters of the traffic and where the money is needed most.

One other item regarding systems. Congress has, in establishing the Interstate System, defined it in Title 23, U. S. Code, as the National System of Interstate and *Defense* Highways described in subsection (e) of section 103 of this Title which section states, "The Interstate System shall be designated within the United States, including the District of Columbia . . . it shall be located as to connect by routes, as direct as practicable, the principal metropolitan areas, cities and industrial centers, to serve the *National Defense*, etc."

In the Department's proposal, they seem to have left out any reference to "National Defense." We wonder if the Department of Transportation, in the drafting of their legislative proposal, consulted with the Defense Department as to what they viewed was needed to enable us to have a National Defense Highway System. The Department of Defense has identified to AASHTO an 18,000-mile network of highways (STRACHNET), in addition to the Interstate System, that they consider essential. AASHTO has cooperated with DOD in doing a needs study on this network. AASHTO has also received a recent communication from General Del Mar of the Military Traffic Management Command indicating his concern for the upkeep and necessary expansion of the National Defense Highway System.

In the program areas under the DOT proposal, the traditional State Highway agency would have responsibilities only for the Interstate System, the Primary System, including its urban extensions, and in urban areas between 50,000 and 200,000 population. The proposal suggests the removal of the Urban System and Secondary System concept with the Systems themselves being retained only for the purpose of bridge replacement, railway-highway crossings, and emergency relief. They further state that all Federal-aid monies can be used on any public road or street. This would apply for both the Urban Highway Program (old urban system) and Small Urban and Rural Transportation Assistance Program (old secondary system.) In proposing this approach, they are essentially destroying the concept of Federal priority on a limited system of roads and streets.

AASHTO has spoken out for more flexibility in the highway program, and supports the reductions of categories, but we sincerely feel that doing away, in part, with the system approach is the wrong way to go. I cite a recent observation regarding local county snow removal procedures. First, they clean the main roads and streets, after that they go to the more heavily traveled neighborhood streets, and, then, finally come back to plow the residential streets. Even here, it is necessary to have a *Priority System*, and if it is necessary for a snow removal program, we feel that it is necessary for any successful Federal-aid highway program.

As you well know, there is only a certain amount of dollars available, and to get the most out of the dollars invested, we feel that it is necessary to continue the system that we currently have in place. In Section 148 of the 1973 Federal-aid Highway Act, Congress called for a functional reclassification of the Federal-aid highways because the system was getting too large. They felt it necessary, at that time, to focus Federal dollars on a smaller number of miles to insure return on the Federal dollars invested.

When Congress established the Interstate System, the need for the system was broadly recognized and convincingly justified. The need to complete the basic Interstate System, and continue with a rehabilitation program of suffi-

cient magnitude to maintain an acceptable level of service is even more acute now than when the system was envisioned.

Last year, the Department of Transportation submitted a study, requested in the Highway Act of 1976, that called for the Secretary to report to Congress on those intercity portions of the Interstate System the construction of which would be needed to close essential gaps in the Interstate System and provide a continuous system. In this report, the Department identified those essential gaps. They represented a total mileage of 2,880 miles at an estimated cost of \$11.18 billion.

The 1977 Interstate System Cost Estimate that was sent to Congress lists \$40.3 billion of which \$36.5 billion is the Federal share of the remaining cost to complete the system. This estimate of cost to complete the Interstate System in the report includes only that work which is required for completion of initial construction of an adequately designed, safe network of limited Interstate mileage. As you can see, there is still a great need on the Interstate System alone.

We concur in the desire to complete the Interstate program as soon as possible, but feel that the provision in the proposal that sets a September 30, 1982, deadline for approval of any Interstate project is not realistic. The bill states that we must have completed the Environmental Impact Statement process, or to have submitted an application for Interstate withdrawal, on all uncompleted segments of the Interstate by September 30, 1982. It further stated that all segments which have not met either requirement will be removed from the System.

We submit that the EIS process, by definition, includes the review of the document by the appropriate Federal authorities, which in many States takes as long as two years on a major project. Therefore, the Secretary should not be in a position to terminate an Interstate segment due to a circumstance beyond the control of the States. Here, we might suggest the failure of a State to submit a draft EIS may be a more logical approach. We also feel that there should be some language to protect a State which may have a project, or projects, in various states of litigation.

AASHTO does support the provision in the proposal that would permit a State to borrow from their following year's apportionment for an Interstate project if they have obligated their current Interstate apportionments. However, we do feel that the payback provision should be spread over several years, rather than as stated in the proposal, the next year.

In their final proposal, the Department has added some new language under the Interstate System resurfacing; or the so-called 3R program, which in the last Highway Act Congress made Federal funds available for Resurfacing, Restoring and Rehabilitating of the Interstate System. In their new formula, they suggest the additional requirement which states, that only those portions of highways, "constructed in whole or in part with funds apportioned under subsection 104(b) (4) and (5) of this Title.:" We feel that this is an unnecessary restriction and that it works against older sections built before the Interstate program, and/or toll roads which are now toll free.

We are also concerned for the Primary and Secondary highways of this nation of ours which have had a low priority over past years, due to the attention given to the Interstate program. The Interstate System alone is not sufficient to connect all of our nation's communities. Federal-aid primary routes, other than those on the Interstate System, are the connecting highways for most communities of over 5,000 population.

To be effective, these main arterial routes must be supplemented by rural and urban collector routes and local systems.

States must continue to maintain responsibility for meeting the needs of the State on main arterial routes, both in rural and urban areas, to coordinate and assess priorities for these developments as they impact on State and regional concerns. In urbanized areas, where transportation improvements are likely to have significant local as well as State and regional impact, State officials should continue to develop programs in consultation with local officials, and on the basis of a continuing comprehensive transportation planning process. Ultimate responsibility for program development of all routes of State and regional impact must remain with the States, however.

Proper development of rural and urban collector roads and streets is also essential for efficient utilization of the main arterial routes. We recognize the

concern of local officials in the development of programs for such collectors and local systems, particularly in urbanized areas where it may be appropriate to invest in other modes of transportation for optimum community development. Even in these areas, however, we believe it important to retain State control to assure an appropriate assessment of statewide priorities and the maintenance of consistent standards, particularly with regard to safety.

In their efforts to consolidate some of the many highway programs in Title 23, an effort which we applaud, we would like to suggest in the small urban and rural transportation assistance section that, rather than mandating that ten percent of sums apportioned be used for public transportation, that this either be a separate public transportation program, or an allowable purpose of program funds.

The Highway Trust Fund has proven to be a very successful mechanism for funding the highway program, and we firmly support its extension.

For capital improvements involving multi-year contracts, federal-aid must be predictably consistent. Authorization of at least four years should be established to ensure that future funding obligations will be satisfied. Such stability is also needed in anticipating local matching requirements. Furthermore, federal financial predictability is essential for avoiding serious economic dislocations resulting from unanticipated changes in levels of federal-aid.

Given the Congressional Budget Act, trust funding based on dedicated revenue sources, with provision for contract authority, is the desired long-term transportation financing mechanism. User charges provide the most equitable means of financing transportation improvement, and trust funds allow a user to identify the cost and benefits he derives from the transportation program.

Many people are under the impression that the Trust Fund only provides financing for the Interstate System. As you know, this is an erroneous impression, as the Federal-aid Primary, Secondary and Urban systems have first call on these funds. Since it was first set up in 1956, other highway programs that had been funded out of the General Fund of the Treasury were incrementally added to the demands on the Highway Trust Funds. No new revenues have been added since 1959, when the Federal gasoline tax was increased from 3 cents to 4 cents.

In regard to the energy legislation that Congress has under consideration, we would urge that provision be included to offset the possible loss of State revenues due to reduction of gasoline sales. The legitimate desire to reduce petroleum consumption, if not properly directed, may well lead to a disastrous deterioration of the nation's transportation facilities and systems.

Therefore, provisions must be made to replace lost revenues, if adequate highway, transit, and other transportation facilities and systems are to be provided. Some States, already, are finding it difficult to provide matching funds for Federal-aid grants, and local governments find themselves burdened with increased transport operating and maintenance costs. This comes at a time when States and these local governments will be expected to assume the additional burden of providing new and improved energy-efficient transportation facilities and services.

The Department's proposal to have uniform matching ratios on all programs, other than the Interstate, is to be commended and will grant some relief to many of our States.

We would also call your attention to the fact that the Department's proposal reduces the authorization for the Interstate System by \$1.375 billion over the life of the Interstate program. In fact, their proposal provides for very little or no growth in most of the highway authorizations. The major program where they suggest an increase is in the special bridge replacement and rehabilitation program. Here, we feel that the Department has made a good proposal, not only in recommending an increase from \$180 million under present law, to \$450 million, but also suggesting that the funds can be used for rehabilitation of bridges that may not need to be replaced. However, they indicated that funds could be used for making, "an inventory of all bridges on or off a Federal-aid system, for *historic significance*." We wonder why for historic significance? We might suggest that funds be allowed to be used to inventory off-system bridges for reasons of safety and prioritizing.

One example that I cite, of the extreme nature of the State's financial need, comes from the 6th Annual Bridge Replacement Report sent to Congress last year. In this report, FHWA listed 105,500 structurally deficient and function-

ally obsolete bridges with an estimated replacement cost of \$23.0 billion. AASHTO surveyed the States and asked them to identify the location of those bridges in their respective States. As a result of their responses, we have compiled a series of maps pinpointing their location. These maps graphically indicate that this is a nationwide problem, both urban and rural.

In speaking of use of the Highway Trust Fund monies, we also do not feel that Trust Fund monies should be used for removal of junkyards and billboards. The beautification program has been funded out of General Funds since its inception, and we see no good reason to change it now. In fact, the Department, in their proposal, is suggesting that several programs that have been funded out of the General Fund now come out of the Trust Fund. Those are: a portion of the emergency relief, territorial highways, Great River Road, specific projects, access roads, safer off-system roads, and railway-highway grade crossings off system. The sum total, which they are suggesting now to come out of the Trust Fund, is \$430 million.

Their proposal does not make any reference to funds for parkways, park roads, and trails, Indian Reservations (other than that portion set aside in safety provisions), public lands development roads, and trails. They also are suggesting that Section 209, Public Lands Highways, be repealed.

Last year, the President announced a series of measures aimed at controlling and reducing inflation. One of his statements was, and I quote, "Development of procedures to eliminate costly and unnecessary delays in construction permit issuance by government agencies, . . ." unquote.

AASHTO wholeheartedly supports the President's statement and sincerely desires to see a reduction in "red tape" and unnecessary duplicative staffing and procedures within the Federal structure.

We are very appreciative of the efforts that the Congress has made in the last two Highway Acts to try and reduce red tape. We refer specifically to the reinstatement of the Secondary Road Plan, the inclusion of Certification Acceptance, and a reduction in the number of categories.

It is our opinion that the Certification Acceptance provisions would be adopted by a larger number of States, if the provision of laws other than just Title 23, could be included. Most of the delays in the programs occur in complying with laws other than Title 23.

We also are encouraged by a report released by Federal Highway Administration, as a result of an internal task force on red tape.

We believe it is vital that the highway program continue. Highways have developed into America's basic transportation system resulting in broad economic, social and cultural benefits to our society. Within the brief span of three generations, an all-weather highway system has come into being largely through the vision incorporated in the first Federal-aid program for a continuing federal-state partnership in highway development.

It must be recognized, however, that the job of providing an adequate highway system for this nation is far from complete. Many complete facilities are physically wearing out. The average life of a highway facility is approximately 20 years; thus, up to five percent of our total network of 3.7 million miles must be replaced or rehabilitated every year just to keep existing systems serviceable at levels commensurate with traffic being served.

We hope these comments will be helpful as the Committee proceeds in the legislative process, and AASHTO would be happy to provide further assistance and information to the Committee, should they so desire.

Respectfully, submitted,

HENRIK E. STAFSETH,
Executive Director.

STATEMENT OF TOM B. WEBB, JR., SECRETARY OF TRANSPORTATION,
FLORIDA DEPARTMENT OF TRANSPORTATION

Mr. Chairman and members of the committee: It is a privilege to have this opportunity to present to you a brief summary of Florida's position on proposals in H.R. 10578, "Highway and Public Transportation Improvement Act of 1978" and to respond to testimony presented by U.S. Secretary of Transportation Brock Adams before this committee on February 1.

Certainly no one genuinely concerned with transportation in this country can quarrel with the concept of increased flexibility to carry out the Nation's

transportation program more efficiently and effectively. Adoption of uniform Federal/local matching ratios should be beneficial to States and should help provide a more balanced approach to transportation while giving some relief to States which have been placed under severe financial pressure as continuing energy conservation efforts result in gasoline tax revenues which lag behind increases in transportation costs.

In his introductory remarks to the committee, Secretary Adams indicated intention to resolve problems resulting from fragmentation of transportation planning assistance and channeling of transportation funds to different recipients of varying formulas. We believe H.R. 10578 would *increase* fragmentation in the planning and urban programs rather than improve the existing situation and we strongly endorse the position of the National Governors' Association and the American Association of State Highway and Transportation Officials that all Federal transportation funding be channeled to the States.

H.R. 10578 addresses seven broad program categories and our position on flexibility and channelization of funds will be clarified further as we address these categories.

PLANNING

Secretary Adams testified: "A first and critical step is to bring transportation planning efforts together so that planning focuses not just on highways or on transit systems but on all the transportation modes and how they can best be used together. Equally important, transportation planning must look beyond transportation itself. Transportation should be a partner in helping to meet other national and local objectives."

We fully agree with these objectives; however, we strongly feel these objectives cannot be achieved by fragmenting the transportation planning process and distribution of planning funds. We support the requirement of a statewide transportation planning process for all areas—urban and rural; in fact, the State of Florida already is active in such a process, but establishment of a statewide planning responsibility is incompatible with the proposal to transfer a major share of planning responsibilities from the States to the metropolitan planning organizations.

While the State of Florida strongly objected to certain elements in the joint FHWA-UMTA regulations which established the MPO planning process, we were one of the leaders nationally in attaining full compliance with these regulations. However, we still contend these MPO's are non-governmental entities which have proved to be politically unstable with a continuous change in membership. MPO's are not legally or practically empowered to bear the primary transportation planning burden. In Florida, the Department of Transportation is the leading partner in conjunction with the MPO's in carrying out the transportation planning process. A reversal of these existing roles, as proposed by H.R. 10578, would be catastrophic, nullifying efforts toward statewide planning and thwarting attainment of statewide transportation objectives.

Florida D.O.T. objects very strongly to the proposal that major metropolitan areas with populations in excess of one million be completely responsible for transportation planning, with plans and programs to be submitted to the U.S. Secretary of Transportation for substantive review. While agreeing that transportation programs should comply with larger socio-economic goals and objectives, the States constitutionally and historically have been responsible for such determination. We disapprove imposition of the Secretary of Transportation in this decisionmaking process.

Furthermore, this proposal is antithetical to the statewide transportation planning effort. The statewide plan would become a patchwork quilt, with major elements the independently conceived and federally authorized components representing major metropolitan area plans.

INTERSTATE

We endorse the Secretary's stated goal to complete the national interstate system as rapidly as possible; however, such a goal seems inconsistent with the proposal to reduce annual authorizations for interstate appropriations from the present \$3.625 billion to \$3.5 billion.

Florida fully supports a change in the interstate apportionment formula which would place greater value on closing essential gaps in the interstate

system; Florida has more than 200 miles of designated interstate highway, all classed as essential system gaps, which are not yet under construction.

Proposals to permit borrowing against the subsequent year's apportionment when current year interstate funds are obligated and to shorten interstate fund availability from four to two years will be highly beneficial to Florida, which has a production capacity far exceeding current funding availability.

Secretary Adams stresses the administration goal to complete the interstate system by 1990. In testimony before this committee last summer, I indicated 1990 appeared a realistic and attainable completion date for the national interstate system—*provided funding permitted acceleration to attain this completion date.*

Florida, which has more miles of interstate highway not yet under construction than any other State in the Nation, can attain this 1990 completion date if interstate funding is appropriately increased. Despite the benefits which would accrue to Florida interstates as a result of some proposals in H.R. 10578, the proposed level of funding provided by this bill does not appear to be sufficient to fund completion of the remaining system by 1990.

Completion of the environmental review process prior to October 1, 1982 seems reasonable for Florida; as does the requirement that all interstate segments be placed under construction by October 1, 1986, *provided sufficient funding is available.*

The interstate transfer provisions included in H.R. 10578 should influence states to make appropriate decisions on completing or withdrawing segments of interstate highways and so make available funds which presently are legally committed to interstate sections which probably never will be constructed. Certainly the concept providing a uniform 90 percent federal funding for projects substituted for interstate withdrawals may ease these difficult decisions somewhat.

RRR

Florida endorses the establishment of a permanent separate program, funded on an 80/20 matching ratio, to assure the interstate system remains in good condition, protecting the massive initial investment in this system. The proposed apportionment formula seems fair and reasonable.

THE PRIMARY SYSTEM

The proposed consolidation of primary highway categories, permissive transfers between urban, small urban and primary categories, and the 80/20 ratio formula proposed for the primary system all are highly acceptable to Florida.

URBAN FUNDS

Establishment of compatible highway and public transportation programs is commendable and desirable. Florida supports the flexibility and transfer provisions proposed in the bill.

While Florida long has advocated expansion of transit authorization by formula and a reduction in discretionary grants of transit funds, the formula proposed in H.R. 10578 causes concern.

While population and population density would appear equitable measures of transit need, provided current demographic information reflecting population changes is used rather than outdated census data, the new factors added to formula calculations appear to favor major urban areas with existing fixed guideway systems, ignoring the needs of rapidly growing cities which have not established major public transportation systems, either rail or bus fleet. Certainly when energy conservation becomes a major consideration in transportation planning, these areas woefully lacking in public transportation facilities should not be slighted by design.

New restrictions placed on federal reimbursement of transit operating deficits appear reasonable, placing a greater demand on local efforts to provide efficient transit which will not rely increasingly on federal contributions to stem a rising tide of red ink.

In highway funding proposals, we see certain serious problems in the methodology proposed for fund distribution and in classification of eligibility for fund expenditure.

While apportionment of urban area funds on the basis of population is an acceptable distribution formula, we reiterate our concern over use of outdated population data, which discriminates against the areas of rapid growth throughout the sunbelt states and equally ignores population losses in other areas of the nation.

We question the wisdom of permitting use of these Federal-aid funds on all roads and streets excepting those on the interstate or Federal primary systems. It is true non-federal system roads are a preponderance of the city street systems; however permitting unrestrained use of these funds might later place a severe burden on other Federal-aid funds, since cities might favor fund use on strictly city streets, to the detriment of highways on the Federal urban system.

Florida strongly opposes the designated recipient approach proposed by Secretary Adams for urban highway funds in areas with populations of one million or more.

We disagree with Secretary Adams' conclusion that UMTA's approach to fund distribution has been highly successful. We feel the FHWA experience in fund allocation and commitment has proven superior to the UMTA approach and, in areas where consolidation of highway and transit funds is envisioned, we recommend use of FHWA procedures.

We must reiterate our concern with direct funding of major metropolitan areas in the context of a statewide transportation planning and programming effort. This statewide process virtually would be destroyed if major urban areas are isolated in both the planning and implementation phases of the transportation effort.

SMALL URBAN AND RURAL

Florida supports consolidation of fund grants in this category, inclusion of all public roads not on the primary or interstate systems in eligibility for small urban or rural funds and earmarking of 10 percent of these funds for public transportation purposes. Although it should be clearly understood public transportation in this context includes buses, jitneys or other highway-related transit, Florida also supports reimbursement to the Federal highway trust fund of any funds used to defray operating deficits for these small urban or rural public transportation systems.

While Florida approves proposed consolidation of funds and the added flexibility provided by such consolidation it appears the consolidated funds are less in toto than the total of previously categorized funds available for these purposes. This funding discrepancy results from failure of authors of this bill to consider section 4(c) of the UMTA Act providing \$500 million in annual authorization for public transportation grants. If section 4(c) is eliminated from the UMTA Act, then logically funds should be carried over and authorized in H.R. 10578.

SAFETY

Florida endorses continued funding of highway safety programs as a separate category. We believe safety problems should be addressed on all public roads and therefore support the provision which would require at least 30 percent of appropriated safety funds be used for off-system roads.

However, we strongly object to the reduced Federal share and to the proposed elimination of the rail highway crossing program from the safety category. Florida has been recognized as a national leader in highway safety and we feel it would be a disservice to our citizens to de-emphasize this program when results, in the reduction of fatalities and injuries and property damage, are proving its merit.

We support use of Federal funds for the purchase of truck weighing scales. This will allow Florida to improve vehicle weight enforcement with resultant safety improvements.

Florida also supports the proposal which would minimize mandatory Federal safety standards, permitting States to identify problems, develop proposed solutions and evaluate results.

BRIDGES

Florida strongly supports the proposal to increase funding for the Federal bridge replacement program and to expand this program to bridge repair and

rehabilitation. We also endorse proposals to permit use up to 30 percent of funding for bridges which are not located in the federal aid system.

We encourage development of some less complicated system for accomplishing objectives of the bridge program. The identification of reasonable standards, particularly for bridges on non-federal-aid routes, and minimization of restrictive permitting regulations would greatly enhance the likelihood of a successful expanded bridge program.

The State of Florida has a unique bridge replacement program which was addressed by Congress in Federal-aid highway legislation of 1974 and 1976. That legislation authorized appropriation of \$109.2 million for replacement of 37 critically deficient bridges on the overseas highway linking the Florida Keys to the mainland. The authorization was calculated as 70 percent of the 1974 estimated construction cost of \$156 million. This estimate now has been updated to include a moderate increase for unanticipated inflation in construction costs (from \$156 million to \$159 million) and for the funding of appropriate engineering costs of \$4.5 million for preliminary engineering and \$15.9 million (10 percent of construction cost) for construction engineering inspection.

We recommend the authorization for the overseas highway bridges be increased appropriately to reflect this revised cost estimate. If this bridge replacement program is carried out within the originally anticipated five year time frame, we expect the latest cost estimate will fairly reflect the true cost to the Federal government and the State of Florida for accomplishment of this essential program.

SOUTH CAROLINA DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION,
Columbia, S.C., March 28, 1978.

Mr. JAMES J. HOWARD,
Chairman, Subcommittee on Surface Transportation, House of Representatives,
Washington, D.C.

DEAR MR. HOWARD: In reviewing the report of Hearings before the Subcommittee on Surface Transportation of the Committee on Public Works and Transportation on H.R. 8648 dealing with highway transit proposals, Part 2, we note testimony contained on page 493 concerning a highway in South Carolina. This testimony to the Committee on December 19, 1977, describes what is considered a misuse of crash cushions on I-85 located near Greenville, South Carolina. A photograph was included in support of the testimony.

The testimony was to the effect that crash cushions were being utilized on I-85 in an improper manner and that these presented a safety hazard to motorists on the highway. The statements indicated that these cushions were being used to prevent traffic crossovers and that the proper solution would be to remove the pavement and restore the median to an unobstructed recovery area. I would like to point out that the testimony is in error and that these crash cushions were not installed to prevent motorists from crossing the median. At the time the photographs were taken a program was under way to improve safety on the road by removing the overhead sign structure and guardrail in the crossing area and thus clear the gore area of a fixed obstacle. The signing was in the process of being relocated to the new site where the crash cushions were in place. At the time the photographs were taken the footings for the replacement of the sign structures were already at the new location. The crash cushions protected motorists from the exposed anchor bolts at the site within the median. This project has now been completed and the crash cushions are being utilized to properly protect the motorists from the sign supports.

We respectfully request that the testimony be corrected and that the record properly reflects the use of the crash cushions. Our Department is making a concerted effort to correct hazardous situations and we welcome any constructive criticism which will enable us to do so. However, we did think, in our opinion, that it is our responsibility to call to your attention this area in the testimony which is in variance with the true facts.

Thank you for your consideration.

Yours very truly,

PAUL W. COBB,
Chief Commissioner.

STATEMENT OF NATIONAL ELECTRIC SIGN ASSOCIATION, AMERICAN SIGN & INDICATOR CORPORATION, AND THE INSTITUTE OF SIGNAGE RESEARCH

To the members of the Committee on Public Works and Transportation of the House of Representatives:

On behalf of the hundreds of members of the National Electric Sign Association (N.E.S.A.) and the Institute of Signage Research and their many thousands of employees throughout the United States and Canada, we are pleased to have the opportunity to call to the attention of this committee an important problem which confronts thousands of businesses, both large and small, as well as millions of tourists and others of the traveling public who are in need of timely and succinct information to assist them as they travel.

The members of N.E.S.A., consisting of sign companies, sign product manufacturers, sign supply distributors and sign users, for more than 30 years have studied the requirements of both business and the pedestrian and driving public. The Institute of Signage Research is a nonprofit institute organized to conduct in-depth research and industry studies on the manufacture and use of on-premise signs. American Sign & Indicator Corporation is the world's leader in the manufacture and development of visual information systems.

These organizations have expended millions of dollars in the development of modern technology to make available electrically operated information display systems which produce attractive, efficient and informative messages, aesthetically pleasing and practical from the standpoint of both the business world and the traveling public.

At no point in the so called Bonus Act of 1958 (Public Law 85-767 as amended) or in the Beautification Act of 1965 (Section 131 of Title 23 U.S.C. as amended) is there any provision for the restricted use or elimination of modern electronic information displays in locations where signs are permitted.

The members of both the Research Institute and N.E.S.A. are engaged almost exclusively in the business of manufacturing, installing and servicing on-premise signs, which are one of the four permitted types under sub-section (c) Section 131 Title 23, U.S.C., and for which no Federal regulations are provided in the Act.

Under the Bonus Act, which expired as of June 30, 1965 only 24 states, which had previously entered into a contract with the Department of Transportation, are bound under the terms of these contracts to continue the restrictions previously promulgated by the Department of Commerce. These regulations provide among other things that "no sign may be permitted which contains, includes or is illuminated by any flashing, intermittent or moving light or lights" and that "no sign may be permitted which moves or has any animated or moving parts." An exception, however, was permitted for time and temperature and public service messages in most agreements under the Bonus Act.¹

Under the Beautification Act a majority of the fifty states have a somewhat similar restriction in their agreements, although no authority was granted in that Act to the Department of Transportation to promulgate regulations or to exercise control of on-premise signs.

Existing technology permits message and informational displays to be presented without affecting highway beautification in any way. The message displays, changed by electronic process or by remote control, can present a variety of public service messages—time and temperature, weather, traffic safety, and information on commercial messages in the interest of the traveling public—all within the standards established for highway beautification.

Electronic information displays use space with remarkable efficiency. An electronic information display does not flash or animate static information. The only movement is the changing of information against the solid colorless background. The face of the display can be either a lamp matrix board or a solid matrix of optical shutters which can be individually opened or closed under computer control, exposing light to form graphics or messages as a unit. Time, date, temperature, weather, directional information, or other public service or commercial messages of interest to the traveling public may thus be offered efficiently with constant light level control and low energy cost.

Electronic information displays are engineered for maximum legibility and readability. Their light is produced by soft incandescent bulbs screened with

¹ It should be emphasized that the present technology of the modern electronic information display had not been developed at the time these contracts were executed.

a special louvered sunscreen to reduce glare. Most such displays contain automatic dimmers so that, as daylight decreases, the intensity of light they emit is reduced. Less brightness is needed for viewing in nighttime than in daytime. Thus the "garish" quality of some bright lights at nighttime, offensive to some, is eliminated.

New and varied uses for these electronic displays of public service and commercial information are being discovered daily by private industry and governmental agencies. For example, the Federal Interstate Highway System now uses electronic information displays to communicate important highway safety information, such as warnings on road conditions, emergency detours and other hazards to the motoring public.

Nevertheless, the attempt to equate these modern devices with objectionable flashing signs continues on the part of the Department of Transportation. It is the contention of many State highway departments that they would readily permit these modern displays if they would not forfeit their bonus or be otherwise penalized under their respective contracts.²

In a report prepared for the Commission on Highway Beautification, entitled "Staff Papers" and dated June 1974, the staff expressed its own views after a two year study on laws and practices affecting highway beautification. On the subject of Electronic Signs, on page 67, the report states in part:

Another device which might be used as an alternative to a great number of signs could be electronic signs which provide variable information. These signs could provide information in a manner similar to the familiar time and temperature signs found in most American Cities.

One advantage for the use of electronic signs might lie in the fact that the content could be changed to reflect different conditions. For instance, if a motel had no vacancies or a gas station were closed or out of gas, its message could be deleted from a directional sign by turning off a light.

In 1974 in a report of the House Committee on Public Works to accompany S. 3934, after reciting the need to supply information to the traveling public, on page 5 the Committee concluded:

As an additional means of providing information to the traveling public, electronic information displays which have a sequential and flexible changeable message capacity and which may be changed by electronic process or by remote control should be permitted to the extent consistent with law. Such information as time, date, temperature, weather, directional information or other public service or commercial message of interest to the traveling public may be offered by way of such systems.

This expression of Congressional intent is significant. In the first place, it recognizes electronic information displays as an effective and efficient means of providing information to the traveling public. Beyond that, it gives direction to federal and state highway officials to permit the use of electronic information displays on Interstate and Federal-aid Primary highways.

However, on numerous occasions the staff of the Federal Highway Administration has thwarted the intent of Congress by promulgating regulations regarding on-premise signs which have been detrimental to the industry. The regulations promulgated by the Highway Administration have also tended to be discriminatory and to create uneven treatment among the states in several types of cases. Furthermore, state officials, as well as sign users, are confused as to how these regulations should be applied because they lack adequate definitions and consistent application.

Only last November the State of Oregon (a Bonus State) had to answer a legal request for the granting of a permit for an electronic message center. The office of the attorney general in a memorandum to the Permits Supervisor concluded:

It is my opinion, that because of the technological advances in the field of electronic signs that electronic message centers such as the one described is not in violation of ORS 377.720 (1)(c) as long as the message displayed on the sign does not flash on and off or change in short sequences and therefore a permit could be issued for such a sign.

This is a difficult question of statutory interpretation and my opinion that the sign is not in violation . . . is subject to challenge by anyone in court and

² A demonstration of these new electronic devices by means of a short movie, which distinguishes clearly their freedom from any of the objections, usually voiced to the flashing variety, is available on request.

I cannot say, with certainty, that the challenge would not be successful. However, under the circumstances, I feel that the permit can be issued and that the person applying for the permit should be advised that interpretations of statutes may differ and the issuance of the permit for such a sign . . . may be challenged by someone in court and if the challenge is successful, the sign would have to be removed.

The permit when issued should contain the following [limitation]:

This permit authorizes a computerized automatic sign displaying a changing message at a timed interval. *However, if the changing message aspect of the sign is challenged in court and is found to be in violation of State and Federal law, the permit will be declared null and void. Upon notification, immediate correction will be required.*

No words which we could add could better express the timidity of state officials in dealing with electronic information signs than in the Attorney Generals' opinion quoted above, nor should anything be more convincing of the necessity for action by this committee.

The Congress has always recognized the need for signs to advise the motorist of the kind of accommodations—motels, hotels, gasoline stations, and restaurants—that may be available. Unfortunately the Federal Highway Administration has made little effort to learn how modern information displays would benefit the federal highway system.

The Department of Commerce promised to develop a system of signs to give the motoring public more information about services and facilities available within reasonable distances of the main traveled roadway. Nevertheless, several studies in recent years have pointed out the increased need for information signs. Locations of gas stations, restaurants, rest areas, motels, in addition to other public service information such as locations of hospitals and first aid services, public rest rooms, public telephones along the highway, and information relating to traffic safety, have uniformly been found inadequate.

Message center displays electronically operated can efficiently present public service messages and advertise the business conducted on the premises in compliance with the clear intent of Congress and without violation of the purpose of the Highway Beautification Act.

Although the Department of Transportation officials are aware that Congress did not intend to regulate message content of on-premise signs, the interpretation of these statutes frequently results in such control. The purpose of the proposed amendments is to make clear that state highway departments which permit use of such electronic information displays shall not be subject to penalties under 23 U.S.C. Section 131.

To clarify the intent of Congress in exempting on-premise advertising, Subsection (j) of Section 131 is proposed to be amended so that states which entered into agreements under the Bonus Act will be given equal treatment with other states regarding on-premise advertising.

No attempt is made to prevent the lighting standards established by a state from eliminating flashing or traveling light characteristics, where such flashing or traveling lights are distractive or constitute a repetitive change of graphics, symbols or words at other than a normal readable speed. However, messages such as time and temperature, weather conditions, directional information or other public service or commercial messages in the interest of the traveling public should be permitted by way of such electronic information display systems.

It is respectfully requested that legislative relief be granted to prevent continuation of the present inequitable application of the various provisions of the Bonus Act and the Highway Beautification Act.

DEPARTMENT OF TRANSPORTATION,
Des Moines, Iowa, February 9, 1978.

HON. JAMES HOWARD,
Chairman, Subcommittee on Surface Transportation, Committee on Public Works and Transportation, House of Representatives, Washington, D.C.

DEAR MR. HOWARD: The Iowa Department of Transportation desires to enter comments for the record related to the proposed *Highway and Public Transportation Improvement Act of 1978* as presented to the Congress on January 26, 1978.

Of overall concern to Iowa is the evident direction and scope of the Bill. All federal highway and transit funds should rather be directed through the states. Inter-modal planning is already being done by state government with local participation, federal program objectives must be in support of this planning. Key concerns which have emerged after careful analysis, are as follows:

Bypass of States—The proposal is to eliminate the states, substituting direct federal-urban relationships in the larger urbanized areas. This includes a virtually complete bypass in the twenty-five cities over one million population, and only token state involvement in cities over 50,000. No meaningful and effective statewide planning and programming can be done with the state excluded from these areas. Congress would, instead, be creating twenty-five separate fiefdoms from the standpoint of federal administration and state programs.

Bridge Replacement—The authorization level is too low, it should be nearer \$1 billion. This program began with the 1970 Highway Act and the states are now prepared for expansion. Preference should be given to funding major interstate bridges over navigable waterways in support of interstate commerce. Iowa alone could obligate well over an additional \$100 million through the four year authorization period, much of it over the major navigable rivers at our borders. This is in addition to Iowa's \$58 million non-Interstate bridge program already programmed for the same period.

Elimination of Federal Systems—The proposed substitution of a "small urban and rural" program with all public road improvements eligible for federal funding is undesirable. It would eliminate the current secondary and urban systems, thereby dissipating the impact of federal assistance. The Federal role would be extended far beyond any reasonable scope of federal interest. It was only as recent as the 1973 Highway Act that Congress moved to reorganize and reduce the various systems in order to concentrate federal efforts on national priority needs as a national goal. The effect of this act would, in fact, be an enormous expansion of the federal-aid system.

Funding Level—Iowa, as a major "frost belt" donor state, is concerned about population oriented formulas for transportation funding programs which will expand the disparity of taxation to receipts in a state like Iowa. Such funding approaches overlook entirely the very basic role our highway system fills in the movement of commodities. Yet it is this movement, particularly that of agricultural products to the export market, that is so vital to our national economy and foreign balance of payments. The federal support of transportation programs, particularly highway, has not kept pace with inflation. The FHWA cost index today is nearly 60 percent above 1972 but federal funds to Iowa are only 33 percent greater. While many states' program capability levels have been directly tied to the level of continuing federal funding, the states are capable of obligating substantially higher sums than are being proposed. Also, the four year authorization period is strongly favored as it will improve program stability. In general the uniform 80/20 matching ratio for non-Interstate programs is supported.

Interstate Resurface, Restor and Rehabilitate—This program is strongly endorsed; however, the proposed investment level is too low. Iowa has the need and capability to expand the program to assure the long term objective of sustaining the structural integrity of this national system. The mix of Interstate construction to 3-R funding should be changed, and the 90 percent matching ratio should be retained.

Transit Program and Highway/Transit Flexibility—The proposed changes in the transit program funding distribution formula, basing four of the five factors on items predominantly related to high population density, will be detrimental to Iowa. The proposed change in the section 3 capital assistance program will effectively eliminate any value to this state.

The flexibility proposed for shifting funds between highway and transit programs is imperfect. On the one hand the act would mandate at least 10 percent of the small urban and rural funds for public transportation but would make permissive the shifting of part of the urban transit funds to highways.

We will be glad to respond to any Committee questions on surface transportation legislation and wish to express our appreciation for this opportunity to comment on this Bill.

Sincerely,

R. L. KASSEL,
Acting Director.

STATEMENT OF WILLIAM C. HENNESSY, COMMISSIONER, NEW YORK STATE
DEPARTMENT OF TRANSPORTATION

Mr. Chairman and Members of the Subcommittee: In its consideration of possible amendment of H.R. 8648 (as submitted to the Public Works and Transportation Committee by Congressman Howard and the members of the Subcommittee on July 29, 1977) to include some of the concepts presented in H.R. 10578 recently introduced, by request, for the Administration, I hope that the Subcommittee will reflect on the issues I and other witnesses offer.

While there are many innovative and potentially beneficial aspects of the Administration proposal which we in New York State could support, there are three provisions of H.R. 10578 which would adversely affect the State's transportation programs and which we strenuously oppose, as follows: Creation of two separately funded planning processes, one for statewide planning and one for urbanized area planning; direct apportionment of Federal-aid Urban highway funds to "designated recipients" in urbanized areas over one million population; and abandonment of the policy for simultaneous completion of the entire Interstate System and the arbitrary subdivision of the designated system into "essential" and nonessential segments.

PLANNING PROPOSALS

In general we applaud the concept of a consolidated planning program. However, the substitution of stratification by geography (i.e., urban area versus statewide) for the present stratification of planning by mode (i.e. highway and transit) replaces one shortcoming with another.

The present modal stratification of planning developed as a result of the separate funding available from the various modal administrations. There is every reason to anticipate that the separate funding of statewide and urban planning processes will result in splitting comprehensive and coordinated planning along the arbitrary boundaries of the urbanized areas. Adoption of the Administration proposal to eliminate the present State role in the urbanized area planning process by separately funding all aspects of the urbanized area planning process can result in pitting the interests of the urban areas against those of the unurbanized areas. We should, by all means, eliminate the artificial walls between the modes in our transportation planning. We must take care, however, not to create new areas to divide our people.

DIRECT APPORTIONMENT TO URBANIZED AREAS

The direct apportionment of urban highway funds to the "designated recipients" or urbanized areas with a population of one million or more could destroy all that we in New York have accomplished in the last five years to develop a partnership of Federal, state and local governments to provide needed highway improvements in New York City and Buffalo and their surrounding suburbs.

The non-Federal share of a 70/30 FAUS project which was not on the State highway system presented a real problem; it impeded the implementation of an effective FAUS program. We resolved this problem with State laws which assure that 80 percent of the non-Federal share of Federal-aid projects in our urbanized areas will be financed from State revenues. Future FAUS projects will be financed by 70 percent Federal, 24 percent state, and 6 percent local funds. State participation in the cost of improvement of non-State highways will ensure the timely implementation of an effective FAUS program in these cities. If Congress relieves the state of any active role in the selection of such projects, however, there is no assurance that the state will continue to participate in the financing of local projects.

We have developed and established the organizations and funding mechanisms required to implement the changes in planning and construction of Federal-aid highways in urban areas mandated by the 1973 Highway Act. We have established an effective and responsive MPO process which with the use of FAUS funds for transit projects and state participation in the costs of improvements to non-state highways contribute to the solution of urban transportation problems.

The radical changes in financing transportation improvements in urban areas proposed in H.R. 10578 will completely upset the organizational relationships and processes which we have worked so hard to establish and which are finally working. It will throw the implementation of the urban transportation program back into the Federal rules and regulations processes and require a significant realignment of the established Federal/state/local relationships. It will very likely take another five years to overcome the disruptions and get the program moving again. By that time, we may be faced with another revision in the basic legislation. We finally have the FAUS program on the tracks; please let us get on with it.

SIMULTANEOUS COMPLETION OF THE INTERSTATE SYSTEM

The Administration has proposed to divide Interstate highways into two groups—high priority “essential gaps” and lower priority other Interstate highways. The Administration has made a determination of which segments of the uncompleted system are essential and which are not. This proposal puts the U.S. Department of Transportation in the position of dictating State priorities concerning the relative need to complete the uncompleted portions of the Interstate System.

On many states the most complex and potentially most beneficial Interstate projects, because of their scope and scale, have been delayed. In general the delay was to ensure that they have been adequately planned and are responsive to national, state, and local needs. The thorny legal, political, and technical problems related to the implementation of these complex projects have been resolved so that construction can move ahead. Now, however, the Administration proposes to reduce significantly the funds available to build these needed portions of the designated Interstate System. The proposal in H.R. 10578 to abandon the time-honored policy of simultaneous completion of the Interstate System will penalize the states and cities which have worked so long and hard on these most difficult, yet most beneficial urban projects.

We suggest that Section 112 and Section 113 of H.R. 8648 provide sufficient flexibility in financing and direction to the states to progress the completion of all portions of the System in a timely manner and to bring the system to final completion.

Thank you for consideration of our views on this matter.

STATEMENT OF THE AD HOC COMMITTEE ON PAVEMENT MARKING

This unnecessary killing must stop. The time has come for an end to alarmist rhetoric about highway safety and [for] a firm commitment to realistic programs which will reverse the escalating tide of mayhem on our highways. (1)

I. HISTORY AND OBJECTIVES OF THE PAVEMENT MARKING DEMONSTRATION PROGRAM

With the passage of the Highway Safety Act of 1973, (2) Congress initiated a multi-faceted attack designed to reduce this Nation's then “escalating tide” of fatal highway traffic accidents. One facet of this attack was the establishment of the Pavement Marking Demonstration Program (3) (hereafter referred to as “PMDP”) which was intended to have the dual purpose of (1) demonstrating to the States the effectiveness of reflectorized pavement marking in reducing the number of traffic accidents, especially those occurring on rural roads, and (2) providing the States with the necessary funding to carry out pavement marking projects on previously unmarked highways not included in the Interstate System. (4) Under the PMDP, priority was to be given to those rural pavement marking projects involving highways either on the Federal-Aid Secondary System or not included in any system. (5)

The PMDP was first proposed by this Subcommittee's predecessor, the Subcommittee on Transportation of the Committee on Public Works. The 1973 Report (House Report 93-118) of the Committee on Public Works to accompany S. 502, entitled “The Federal-Aid Highway Act of 1973,” (6) indicated that the primary purpose of the PMDP was the reduction of the disproportional

tionately high number of highway traffic accident deaths occurring on rural roads. (7) The Committee found that, of the over 56,000 highway traffic accident deaths which occurred in 1972, (8) 32,000 resulted from accidents occurring on rural two-lane roads. (9) The fatality rates on those rural highways were found to be twice as high as the rates on rural Interstate highways and urban streets. (10)

The installation of reflectorized pavement marking was envisioned by the Committee as adding three major safety features to rural highways. These safety features were (1) centerlining to separate the opposing directions of traffic flow, (2) centerlining to stripe passing and no-passing zones, and (3) edgeline to provide needed guidance references, this last being particularly useful at night when motorists tend to guide their vehicles off the right side of the road in order to avoid the glare of the headlights of oncoming vehicles. (11)

The original mileage/marking objectives of the PMDP were (1) to centerline, including the associated striping of passing and no-passing zones, the estimated 800,000 road miles of two-lane, paved rural roads which carry over 200 vehicles per day and (2) to edgeline the estimated 500,000 road miles of paved Federal-Aid Primary and Secondary highways and all non Federal-Aid highways which carry over 250 vehicles per day. (12) To centerline and delineate passing and no-passing zones on one road mile requires the installation of one and one-half line miles of pavement marking (800,000 road miles $\times$ 1.5 = 1,200,000 line miles). Similarly, to edgeline both margins of one road mile, two line miles of pavement marking have to be installed (500,000 road miles $\times$ 2 = 1,000,000 line miles).

To complete its pavement marking/mileage objectives, the Committee on Public Works recommended an authorization of \$250 million for two years at the rate of \$125 million per year for fiscal years 1974 and 1975. (13) When the Committee was considering the establishment and funding of the PMDP in the spring of 1973, the cost of installing one line mile of reflectorized pavement marking was estimated to be \$113.63. (14) The per-line-mile cost included labor, materials, equipment, depreciation, fuel, surveys of passing and no-passing zones, and the associated administrative expenses. Assuming no increase in this per-line-mile cost, the Committee's recommended authorization would have enabled the completion of its mileage/marking objectives (2,200,000 line miles $\times$ \$113.63 per line mile = \$249,986,000).

When the Highway Safety Act of 1973 emerged from conference, authorizations for the PMDP were established at \$175 million over three years, with \$25 million authorized for fiscal year 1974 and \$75 million each for fiscal years 1975 and 1976. (15) Again assuming no increase in the estimated per-line-mile cost of \$113.63, the authorizations for the PMDP would have enabled the installation of 1,540,086 line miles of pavement marking, or 70 percent of the line-mile objective of 2,200,000.

The 1973 cost estimate of \$113.63 per line mile did not remain constant, however. By the beginning of 1975 and as a direct result of the 1973 Oil Embargo, the per-line-mile cost of installing reflectorized pavement marking had risen 40 percent to \$159.08. (16) In the fall of 1975 when this Committee was considering the Highway Safety Act of 1976, the average per-line-mile cost of reflectorized pavement marking through the life of the program, including the proposed two-year extension (through September 30, 1978), was estimated to be "somewhere in the area of \$184 per line mile." (17)

It should be noted that these early estimates (1975) were calculated increases resulting from the general upward inflationary trend of the economy and the tremendous increases in the cost of energy. (18) From these estimates this Committee anticipated that an additional \$224 million would be required to complete the original mileage/marking objectives as set forth above. (19)

In 1976 the PMDP was extended for two years by the Highway Safety Act of 1976, (20) and after conference, authorizations for the program were set at \$50 million each for fiscal years 1977 and 1978. (21) Based upon the cost estimate of \$184 per line mile, the authorization of \$100 million, as opposed to the estimate of \$224 million, would not provide the necessary funding to complete the mileage/marking objective of the Demonstration Program.

II. STATE ACTIVITY UNDER THE PMDP TO DATE

Whether measured in terms of the amount of funds obligated or the number of road miles marked, early implementation of the PMDP was extremely slow. During fiscal year 1974 just four states, Alabama, Ohio, Pennsylvania and Wisconsin, had obligated PMDP funds, and only two of them, Alabama and Pennsylvania, had actually installed pavement markings on their highways. (22) (See Table I at the end of this section.)

The principal reason for the low level of activity during fiscal year 1974 was that the states did not have existing inventories of unmarked or incompletely marked highways not included in the Federal-Aid Primary System or state system. (23) Such inventories were necessary in order to determine the location, length and priority of state roads eligible for marking under the PMDP. However, the states' desire to participate in the PMDP was evidenced by the fact that over thirty states had begun to make the required inventories by the end of fiscal year 1974. (24) In addition, the PMDP, along with much of the Highway Safety Act of 1973, was new, and time was required to organize and to develop standards and implementation procedures. (25)

State participation in the PMDP soared after the problems associated with its implementation were resolved, and by the end of fiscal year 1975, forty-five states had begun PMDP projects. (26) (See Table II at the end of this section.) Further, at the end of fiscal year 1976 every state except Alaska was participating in the PMDP, and in that year alone twice the number of miles were marked as had been marked over the entire previous two years. The number of miles marked in fiscal year 1976 equaled 121,931, (27) as opposed to only 61,302 miles marked during the first two years of the program. (28) (See Table II at the end of this section.) Further, although the 1977 mileage/marketing data is not complete, FHWA data indicates that 103,709 miles were marked during fiscal year 1977. (See Table III at the end of this section.)

In summary, by the end of fiscal year 1977 the states had marked a total of 286,942 miles of roadway and had obligated a total of \$180 million in PMDP funds. (See Table IV at the end of this section.) Based upon these figures, the average per-line-mile cost over the life of the program to date is \$179.23, which figure is less than the \$184 per-line-mile average estimated in 1975. Further, it is estimated that at the end of fiscal year 1978 an additional 142,000 miles will be marked. (See Table III at the end of this section.) Therefore, over the entire life of the program through fiscal year 1978, 430,000 miles will have been marked by the states.

It should be noted further that, since the inception of this program in 1973, some states (for example, Alabama, California, Florida, Georgia, Illinois, Massachusetts, Mississippi, New York, Ohio, Texas and West Virginia) have begun to explore new ways and new combinations of ways to mark their roads. For example, an increasing number of roads are being striped with the more durable reflectorized thermoplastic line and/or raised reflective markers. The average cost per line mile will increase substantially as this trend continues.

The initial objective of the PMDP, as set forth in House Report 93-118, (29) was to mark 800,000 miles with centerlines and 500,000 miles with edge-lines. The existing provisions of H.R. 8648 extending the PMDP for a four-year period with an annual authorization of \$75 million will allow this objective to be completed and will bring the Pavement Marking Demonstration Program to an orderly and timely conclusion.

TABLE I.—PMDP ACTIVITY DURING FISCAL YEAR 1974

State	PMDP obligation	miles marked
Alabama.....	\$182,000	285
Ohio.....	952,456	
Pennsylvania.....	455,000	1,169
Wisconsin.....	224,420	
Total.....	1,813,876	1,454

Source: First Annual Report On Highway Safety Improvement Programs, H.R. Doc. No. 94-41, 94th Cong., 1st sess. 19 (1975); Second Annual Report On Highway Safety Improvement Programs, H.R. Doc. No. 94-366, 94th Cong., 2d sess. 24 (1976).

TABLE II.—PMDP PROJECTS AND MILES MARKED, FISCAL YEARS 1974-75

State	Number of authorized PMDP programs		Number of miles marked	
	Fiscal years 1974 and 1975	Fiscal year 1976	Fiscal years 1974 and 1975	Fiscal year 1976
Alabama	36	12	5,916	2,200
Alaska (markings completed)				
Arizona	7	1	1,313	490
Arkansas	13	3	5,460	1,611
California	6	25		4,590
Colorado	10	0		1,826
Connecticut	7	4	95	2,912
Delaware	3	2	707	197
Florida	0	32		1,462
Georgia	21	7	7,102	7,416
Hawaii	1	1		78
Idaho	2	2		2,538
Illinois	1	34	222	738
Indiana	2	44		1,328
Iowa	0	35		1,936
Kansas	1	8	803	2,156
Kentucky	2	1		705
Louisiana	10	16	1,907	4,972
Maine	2	2	(1)	(1)
Maryland	1	7		337
Massachusetts	2	0	396	1,690
Michigan	2	1	4,000	14,823
Minnesota	2	0		1,980
Mississippi	1	14		1,145
Missouri	5	10	594	1,448
Montana	1	1		1,148
Nebraska	7	3	136	2,901
Nevada	3	1		115
New Hampshire	1	4		779
New Jersey	4	4		921
New Mexico	11	5	1,243	592
New York	0	48		4,412
North Carolina	14	4	4,275	5,122
North Dakota	2	3		2,082
Ohio	26	54	7,557	9,565
Oklahoma	0	48		2,913
Oregon	18	25	2,985	3,365
Pennsylvania	22	24	6,075	5,380
Rhode Island	1	0		165
South Carolina	8	13	5,672	144
South Dakota	9	1	1,270	3,283
Tennessee	18	13	957	8,235
Texas	3	37	426	1,164
Utah	10	2	143	1,310
Vermont	0	1		
Virginia	16	5	775	1,601
Washington	4	28		
West Virginia	1	0		2,542
Wisconsin	21	14	1,273	4,506
Wyoming	2	1		1,108
District of Columbia	0	0	(2)	(2)
Puerto Rico	1	0	(2)	(2)
Total	340	600	61,302	121,931

¹ Not reported.² Program not funded through fiscal year 1976.

Source: 1977 Annual Report, Highway Safety Improvement Programs, H.R. Doc. No. 95-136, 95th Cong, 1st sess. tables V-1 and V-5, pp. 15 and 20 (1977).

TABLE III.—MILES OF PAVEMENT MARKINGS BY HIGHWAY SYSTEM¹

[Figures in brackets indicate percent]

Highway system	Miles marked fiscal year 1977		Miles to be marked	
Federal aid primary	15,373	[14.8]	15,328	[10.8]
Federal aid secondary	53,383	[51.5]	50,382	[35.5]
Federal aid urban	652	[0.6]	5,725	[4.0]
Total Federal aid	69,408	[66.9]	71,090	[50.1]
Non-Federal aid State	4,803	[4.6]	7,276	[5.1]
Non-Federal aid local	29,498	[28.5]	63,907	[45.0]
Total Non-Federal aid	34,301	[33.1]	70,912	[49.9]
Total	103,709	[100.0]	142,002	[100.0]

¹ 40 States reporting.² Columns do not add to totals due to Missouri and Oklahoma not breaking down mileage by system.

Source: Office of Highway Safety, Federal Highway Administration, U.S. Department of Transportation.

TABLE IV.—U.S. DEPARTMENT OF TRANSPORTATION; FEDERAL HIGHWAY ADMINISTRATION—STATUS OF FUNDS ALLOCATED FOR THE PAVEMENT MARKING DEMONSTRATION PROGRAM AS OF SEPT. 30, 1977

State	Total allocated	Obligations			Unobligated balance
		Through Sept. 20, 1976	Fiscal year 1977 to date	Total	
Alabama	6,889,628.00	4,265,703.55	2,464,162.23	6,729,866.18	159,761.82
Alaska	415,095.00		271,845.00	271,845.00	143,250.00
Arizona	1,772,483.00	1,244,372.11	25,237.76	1,269,610.67	502,872.33
Arkansas	2,531,619.00	1,845,560.00	513,013.00	2,358,573.00	173,046.00
California	11,265,586.00	5,220,080.00	5,423,855.00	10,643,935.00	621,651.00
Colorado	2,611,842.00	1,435,806.79	787,680.91	2,223,487.70	288,354.30
Connecticut	1,477,825.00	1,062,971.18	405,263.76	1,468,234.94	9,590.06
Delaware	728,592.00	566,800.00	11,500.00	555,300.00	173,292.00
Florida	6,812,278.00	1,527,125.00	4,941,196.00	6,468,321.00	343,957.00
Georgia	6,811,085.00	4,646,183.00	1,961,529.73	6,607,712.73	203,372.27
Hawaii	454,425.00	110,079.00	100,990.00	211,069.00	243,356.00
Idaho	2,091,356.00	1,026,415.00	387,716.00	1,414,131.00	677,225.00
Illinois	6,685,923.00	4,088,675.57	656,789.71	4,745,465.28	1,940,457.72
Indiana	6,244,355.00	4,408,801.97	1,162,134.03	5,570,936.00	673,419.00
Iowa	3,967,498.00	3,019,111.00	891,840.28	3,910,951.28	56,546.72
Kansas	3,478,542.00	2,594,682.00	600,256.53	3,194,938.53	283,603.47
Kentucky	5,716,359.00	1,622,402.00	1,849,429.00	3,471,831.00	2,244,528.00
Louisiana	4,180,995.00	3,195,084.00	833,941.24	4,029,025.24	151,969.76
Maine	2,405,235.00	1,665,900.00	623,406.49	2,289,306.49	115,928.51
Maryland	3,265,021.00	808,575.00	811,950.00	1,620,525.00	1,644,496.00
Massachusetts	1,759,545.00	974,388.00	742,637.00	1,717,025.00	42,520.00
Michigan	6,718,743.00	4,962,708.00	1,600,575.00	6,563,283.00	155,460.00
Minnesota	5,070,074.00	3,951,035.00	800,000.00	4,751,035.00	319,039.00
Mississippi	3,678,315.00	2,852,899.00	357,384.00	3,210,283.00	468,032.00
Missouri	6,517,986.00	1,114,276.60	4,665,759.29	5,780,035.89	737,950.11
Montana	1,711,541.00	732,858.00	658,000.00	1,390,858.00	320,683.00
Nebraska	2,067,684.00	865,875.00	899,185.97	1,765,060.97	302,623.03
Nevada	893,901.00	505,709.00	325,860.00	831,569.00	63,232.00
New Hampshire	1,279,197.00	329,803.52	262,954.85	592,758.37	686,438.63
New Jersey	2,570,447.00	623,380.00	471,865.00	1,095,245.00	1,475,202.00
New Mexico	1,675,464.00	404,489.47	589,857.64	994,347.11	681,116.89
New York	8,684,304.00	5,679,810.00	2,131,032.00	7,810,842.00	873,462.00
North Carolina	8,927,303.00	2,884,769.00	2,177,791.00	5,062,560.00	3,864,743.00
North Dakota	1,467,113.00	780,020.00	274,990.00	1,055,010.00	412,103.00
Ohio	12,113,601.00	9,226,100.00	1,908,289.00	11,134,389.00	879,212.00
Oklahoma	3,803,355.00	2,194,403.38	132,445.34	2,326,848.72	1,478,506.28
Oregon	3,410,687.00	1,805,117.95	866,652.27	2,671,770.22	738,916.78
Pennsylvania	10,264,812.00	7,317,095.00	1,951,660.00	9,268,755.00	996,057.00
Rhode Island	341,386.00	190,385.96	151,000.04	341,386.00	
South Carolina	6,493,354.00	3,270,690.00	1,831,396.05	5,102,086.05	1,391,267.95
South Dakota	2,007,991.00	1,147,735.00	816,984.83	1,964,719.83	43,271.17
Tennessee	6,207,427.00	4,467,653.00	738,715.00	5,206,368.00	1,001,059.00
Texas	15,245,353.00	9,046,376.00	2,032,220.06	11,078,596.06	4,166,756.94
Utah	1,402,326.00	346,172.00	216,147.00	562,319.00	840,007.00
Vermont	796,956.00	473,115.16	47,714.41	520,829.57	276,126.43
Virginia	6,216,583.00	2,296,831.00	1,897,742.82	4,194,573.82	2,022,009.18
Washington	4,838,090.00	1,784,576.89	713,657.74	2,498,234.63	2,339,855.37
West Virginia	2,164,555.00	1,708,444.00	275,026.00	1,983,470.00	181,085.00
Wisconsin	9,552,426.00	5,045,509.15	2,747,578.04	7,793,087.19	1,759,338.81
Wyoming	1,169,697.00	933,899.00	128,750.00	1,062,649.00	107,048.00
District of Columbia	150,000.00		149,999.50	149,999.50	.50
Puerto Rico	369,042.00	192,977.00	176,065.00	369,042.00	
Total	219,375,000.00	122,463,429.45	57,440,671.52	179,904,100.97	39,470,899.03

Source: U.S. Department of Transportation, Federal Highway Administration, Office of Highway Safety, Report On The Status Of Funds Obligated For Safety Improvements From July 1976 to Sept. 30, 1977.

III. EFFECTIVENESS OF PAVEMENT MARKING

When the extension of the PMDP was under consideration in the fall of 1975, there was little information available to this Committee with which to evaluate the effectiveness of authorized PMDP projects in reducing the number of rural highway traffic accidents and the resulting deaths and injuries. In its 1975 statement supporting the extension of the PMDP, the Ad Hoc Committee on Pavement Marking referred this Subcommittee to the extremely favorable general experiences of Great Britain, France, Japan and Sweden with pavement marking and to the encouraging results of formal tests conducted in the United States and Germany. Those portions of the Ad Hoc Committee's 1975 statement describing both the general experience with pavement marking and the results of formal pavement marking tests are set out in Appendix A.

The initial FHWA evaluation of the effectiveness of the PMDP was contained in the 1977 Annual Report On The Highway Safety Improvement Programs. (30) This evaluation demonstrated pavement marking to be a cost-efficient technique to reduce the number of highway traffic accidents. PMDP projects costing a total of \$3.1 million were found to have reduced highway traffic accidents by 1,032 per year. (31) Of major significance to this Committee is the fact that fatalities were reduced by 6 percent overall, and Arizona, one of the states whose PMDP projects had been included in this initial FHWA evaluation, experienced a 13 percent reduction in the number of fatal accidents, a 15 percent reduction in injury accidents, and a 9 percent reduction in property damage accidents. (32) A second FHWA evaluation of the effectiveness of the PMDP should be contained in the 1978 Annual Report On The Highway Safety Improvement Programs. This Committee will be informed of the results of this evaluation when it becomes available.

Further, the effectiveness of pavement marking was recently evaluated in a report prepared for the FHWA's Office of Research and Development, entitled "Evaluation Of Highway Safety Program Standards Within The Purview Of The Federal Highway Administration." (33) The data used in this evaluation were obtained from reports submitted by the States to the FHWA in connection with 23 different highway safety improvement measures constructed with either Federal-aid or state funds. Therefore, with respect to pavement marking, the findings of this report are not limited to the effectiveness of Federally-funded PMDP projects but rather demonstrate the effectiveness of pavement marking as a technique to reduce the number of highway traffic accidents. The effectiveness of pavement marking (referred to as "installation of striping and/or delineators" in the report) was based on the "before and after" accident experience for 2,000 pavement marking projects. (See Table V at the end of this section.)

The "installation of striping and/or delineators" ranked second among the 23 safety countermeasures evaluated. The related benefit-cost ratio was 26.49:1, which means in dollar terms that the pavement marking safety countermeasure, as calculated by this evaluation, yielded a benefit of \$26.49 for every dollar invested. (See Table V at the end of this section.)

Of paramount significance to this Committee is the fact that in the 2,000 projects evaluated the incidence of fatalities decreased from 113 deaths "before" to 60 deaths "after," or by an annual fatality reduction of an amazing 46 percent. Further, this "before and after" accident experience yielded an annual accident reduction of 13 percent and an annual injury reduction of 22 percent. (See Table V at the end of this section.)

TABLE V.—SAFETY BENEFITS OF COUNTERMEASURES

Rank	Code	Improvement	Average Annual Accident Experience						Annual percent accident reduction expected				Benefit ¹	Cost/ project	Benefit/ cost ratio	
			Before			After										
			Service of life projects	Number of projects	Acci- dents	Injur- ies	Fatal- ities	Acci- dents	Injur- ies	Fatal- ities	Acci- dents	Injur- ies	Fatal- ities			
1	23	Shoulder widening or improvement.....	20	46	1,917	585	35	1,353	465	21	29	20	41	\$4,754,088	\$35,200	\$28.83
2	64	Installation of striping and/or delineators.....	4	2,000	5,849	3,351	113	5,060	2,599	60	13	20	46	17,493,150	1,094	26.49
3	25	Skid treatment/grooving.....	20	96	1,117	395	27	580	2,275	7	48	30	74	6,372,399	32,385	20.12
4	60	Installation or upgrading of traffic signs.....	4	775	3,727	1,538	80	2,879	1,038	23	33	27	67	8,031,275	2,278	15.03
5	57	Signing and/or marking.....	10	3,046	191	142	34	192	82	22	42	35	3	3,638,462	536	14.94
6	63	Installation or improvement of median barrier.....	10	23	962	479	48	994	449	4	-3	6	91	12,712,361	270,070	13.73
7	65	Roadway lighting installation.....	10	115	1,119	546	20	1,022	499	6	9	73	4	4,393,559	19,363	13.24
8	62	Installation or improvement of road edge guardrail.....	10	1,681	2,077	844	69	1,716	719	29	13	15	59	12,373,743	4,546	10.97
9	50	Flashing lights replacing signs only—railroad crossing.....	10	56	36	17	7	2	1	06	94	93	99	2,014,632	25,655	9.41
10	60/64	Signs/stripping combination.....	4	485	5,858	2,844	90	4,464	2,108	65	24	26	44	9,982,024	8,270	8.60
11	61	Breakway signs or lighting supports.....	4	527	195	41	2	127	23	0	35	54	100	656,538	569	7.25
12	11	Traffic signals, installed or improved.....	10	659	9,408	4,181	87	7,698	2,840	43	18	32	49	17,688,205	26,650	6.36
13	26	Skid treatment/overlay.....	20	126	3,071	1,627	37	2,552	1,194	26	27	30	44	4,747,692	60,796	6.09
14	55	Automatic gates replacing signs only.....	10	101	431	17	11	0	0	03	29	99	100	3,100,704	37,872	5.44
15	10	Channelization, including left turn bays.....	10	612	5,815	2,618	83	4,481	1,860	30	23	29	65	17,982,781	50,091	3.94
16	20	Pavement widening, no lanes added.....	20	241	351	205	1	234	127	4	25	38	36	859,826	13,696	2.97
17	13	Sight distance improved.....	10	142	388	205	6	234	127	4	31	38	36	859,826	13,696	2.97
18	12	Combination of 10 and 11.....	10	36	887	333	1	609	215	5	31	35	96	948,528	33,921	1.13
19	56	Automatic gates replacing active devices.....	10	166	28	11	3	332	150	3	81	75	96	1,350,900	211,055	.91
20	42	Combination of 40 and 41.....	20	163	423	219	6	332	150	3	21	32	69	1,548,658	118,475	.90
21	31	Replacement of bridge or other major structures.....	30	163	113	84	5	63	33	0	44	60	47	1,900,544	114,987	.80
22	21	Lanes added, without new median.....	20	96	1,482	595	7	1,224	531	5	17	31	31	1,900,544	114,987	.80
23	30	Widening existing bridge or other major structures.....	20	354	565	291	3	198	76	2	65	74	33	1,103,632	75,440	.41

¹ Computed according to Metric 7A.

Source: Report No. DOT-FH-11-9219, "Evaluation Of Highway Safety Program Standards Within

The Purview Of the Federal Highway Administration," March 1977 Final Report, p. 158, prepared for U.S. Department of Transportation, Federal Highway Administration, Office of Research and Development.

IV. NEED TO COMPLETE ORIGINAL OBJECTIVES OF PMDP

The number of fatalities resulting from highway traffic accidents peaked at approximately 56,000 per year in 1972 and 1973. (34) During the next three years the number of fatalities held steady at about 46,000 per year. (35) Between 1972 and 1976 the number of fatalities resulting from highway traffic accidents occurring on rural roads decreased by 21.4 percent, from 36,056 to 28,341, (36) and, as a percentage of total fatalities, from 64.7 percent to 61.1 percent. (37)

Based on National Safety Council data,¹ it is estimated that 36 percent of all 1976 highway traffic accident fatalities occurred on rural roads at night. (38) The fatal accident rate on rural roads at night is 9.39 deaths per 100,000,000 vehicle miles, which is over twice the rate for urban roads at night. (39) Of the 25,500 rural highway fatal traffic accidents reported by the National Safety Council for 1976, 4,794 fatal accidents, or 18.8 percent, were caused by the collision of two motor vehicles moving in opposite directions; another 8,696, or 34.1 percent, resulted from vehicles overturning at non-intersection locations; and 1,607, or 6.3 percent, resulted from the collision of a vehicle with a fixed object. (40) Thus, 15,097 of 25,500 rural highway fatal traffic accidents, or 59.2 percent, resulted from the type of highway traffic accidents which reflectorized pavement marking, visible at night, is capable of preventing.

Reflectorized centerlines provide motorists with a visual guide to indicate how far to the left of the road surface they may position their vehicles without risking a head-on collision with a vehicle approaching from the opposite direction. The installation of reflectorized passing and no-passing zones assists a motorist in determining whether an attempted pass to the left of a lead vehicle would risk a head-on collision with an approaching vehicle.

Reflectorized edgelines warn the motorist when his vehicle is approaching the right shoulder of the road surface, which is especially critical at night when motorists tend to guide their vehicles off the right shoulder to avoid the glare of approaching headlights. Thus, edgelining can reduce the number of highway traffic accidents, including injuries and fatalities, by preventing vehicles from leaving the road surface via the right shoulder and then either overturning or colliding with a fixed object.

The highway safety programs established by the Highway Safety Act of 1973, in concert with other Federal and state highway safety projects and the 55 mile-per-hour national maximum speed limit, have reduced the number of total highway traffic accident fatalities from 55,704 in 1972 to 46,363 in 1976.² Considered alone, this is an accomplishment of which the Nation can be proud. Viewed against the 144-billion mile increase in the number of vehicle miles traveled over the same period, (41) this reduction in fatalities takes on increased significance. Even with this large increase in the number of vehicle miles traveled, the fatality rate per 100-million vehicle miles traveled decreased from 4.40 in 1972 to 3.29 in 1976. (42) On rural highways, where over 60 percent of all highway traffic accident fatalities occur, the number of fatalities relative to the number of non-fatal injured persons has decreased every year from 1972 through 1976. (43)

This decreasing fatality rate may be in jeopardy. The increased cost of gasoline, the need to conserve crude oil in order to reduce dependency on foreign sources, and the national goal of reducing automobile emission pollution through increasing the miles-per-gallon rating of automobiles have increased the popularity (registration) of smaller, more fuel efficient cars. A 1973 study prepared by the University of North Carolina's Highway Safety Research Center found that the probability of injury or death occurring to the occupants of a smaller car, once an accident has occurred, is up to six times that for occupants of a larger car. (44)

¹ National Safety Council data differs slightly from FHWA data.

² Source: U.S. Department of Transportation, Federal Highway Administration. *Fatal and Injury Accident Rate, 1975*, Table FTT-1, p. 26. Figure for 1976 obtained from Charles Horton, Office of Highway Safety, Federal Highway Administration.

A more recent study prepared by the Center for the Environment & Man, Inc., (CEM projected the relationship between the risk of highway traffic accident fatalities and an increased use of smaller cars. (45) A doubling of the 32 percent 1972 market share of subcompact and compact cars to 65 percent in 1985 was found to increase the average fatality risk for occupants of all cars, once an accident occurs, *by as much as 15 percent.* (46) The 1975 and 1976 market shares of subcompacts and compacts, based on domestic new car registrations, were 41.5 percent and 38.9 percent, respectively. (47) If imported cars are included within this "small car" classification, the market shares of total new car registration were 52.1 percent in 1975 and 48.1 percent in 1976. (48) These latter figures exceed CEM's projection of 45 percent as the 1975 market share for subcompacts and compacts (49) and indicate that the 65 percent market share by 1985 is a distinct possibility, as well as the associated 15 percent estimated increase in the risk of highway traffic accident fatalities.

The Highway Safety Act of 1973 committed this Nation to a comprehensive program aimed at reversing the "escalating tide of mayhem" on its highways. (50) Based solely upon the difference of 9,341 between the total number of highway traffic accident fatalities in 1972 and 1976, the "tide" has ebbed. Pavement marking, an increasingly proven technique to reduce the number of highway traffic accidents, has been a most effective part of this comprehensive program and the PMDP should be continued until the original 1973 objectives of this Committee are achieved and final results are available and fully evaluated. The provisions of H.R. 8648 related to the Pavement Marking Demonstration Program will complete these objectives.

APPENDIX A

EXCERPTS FROM 1975 STATEMENT OF AD HOC COMMITTEE ON PAVEMENT MARKING

I. Excerpt from page 3 of the Statement of the Ad Hoc Committee On Pavement Marking, submitted to the Subcommittee On Surface Transportation, Committee On Public Works and Transportation, U.S. House of Representatives, on September 23, 1975:

Statistics of rural road travel in Great Britain, where center delineation has been practiced more intensively since World War II than in any other country, show the lowest rural traffic fatality rate in the world.¹ Sweden, which has the lowest overall fatality rate, marks highways intensively.² In Japan, marking has contributed to one of the most substantial achievements to date in road safety. Between 1967 and 1973, the number of vehicles on Japan's highways more than doubled. Traffic deaths, however, decreased substantially.³ Japan's carefully planned, integrated highway safety program recognizes the value of pavement markings. More markings per kilometer of paved road, of sufficient width, are applied annually in Japan than in any other country. This number is approximately three times more than are placed in the United States.⁴ Recently in France, where dramatic new initiatives are being undertaken, new highway markings have been installed and the results observed are comparable to those reported in connection with the controlled tests conducted in the United States and Germany.⁵ These tests are summarized in Appendix 1 and referenced in full in the bibliography. Figure 6 shows the basic results in terms of achieved reductions in accidents and casualties.

¹ British Ministry of Transport, Department of Environment, *Road Accidents in Great Britain, 1973* (London: Queens Printers, 1973).

² British Road Federation, *Basic Road Statistics 1973* (London: 1973).

³ Statistiska Central Byram, *Vagtrafikolyckor Med Personskada* (Stockholm: 1973).

⁴ National Police Agency of Japan, Traffic Bureau, *Road Accidents Involving Injuries 1973* (Tokyo: Japan International Cooperation Agency, 1974). Published in English.

⁵ National Police Agency of Japan, Traffic Bureau, *Traffic Police Japan 1974* (Tokyo: Japan International Cooperation Agency, 1974). Published in English.

⁶ Office of the Prime Minister of Japan, *Report On Highway Safety* (Tokyo: 1973 and 1974). Verified by calculations of the use of marking materials in Japan.

⁷ Observations by the French Ministry of Transport to be published.

The following are the footnotes from the preceding excerpt:

II. From Appendix 1 of 1975 Statement as referenced in preceding excerpt:

APPENDIX 1

SUMMARY OF TESTS OF THE SAFETY EFFECTIVENESS OF PAVEMENT MARKING

Tests of the effectiveness of highway markings have been reported by seven state highway departments and by three states in West Germany. The accident reduction is summarized in the following:

[In percent]

	Accident reduction	Injury reduction	Death reduction
California.....	-64.0		
Kansas ¹	-16.5	-11.9	-39.5
Kansas ¹	-14.5		-75.0
Ohio.....	-19.0	(2)	(2)
Illinois.....	-21.0	-16.0	-40.0
Michigan.....	-3.0	-41.0	-78.0
Utah.....	-38.0		
Arizona.....	-60.0		
West Milford, N.J.....	-44.0	(3)	(3)
Bavaria, West Germany.....	-10.0		
Hesse, West Germany.....	-20.0		
Lower Saxony, West Germany.....	-25.0	-47.0	-55.0

¹ Kansas conducted two tests.

² Total casualties—37 percent.

³ Total casualties—44 percent.

REFERENCES

Section I

- (1) House Report No. 93-118, 93rd Congress, 1st Session 31 (1973).
- (2) Public Law 93-87, Title II, 87 Stat. 282 (1973).
- (3) Public Law 93-87, Title II, § 205, 87 Stat. 284 (1973), codified at 23 U.S.C. § 151.
- (4) U.S.C. § 151(a).
- (5) 23 U.S.C. § 151(c), as first enacted.
- (6) Supra Reference 1.
- (7) Ibid., p. 36.
- (8) Ibid., p. 31.
- (9) Ibid., p. 36.
- (10) Ibid., p. 36.
- (11) Ibid., p. 37.
- (12) Ibid., pp. 37-38.
- (13) Ibid., p. 37.
- (14) Estimate found at page 2 of letter dated October 21, 1975, from Arthur E. Cameron, Esq., to Clifton W. Enfield, Minority Counsel, House Committee on Public Works and Transportation.
- (15) Senate Conference Report No. 93-355, 93rd Congress, 1st Session (1973); 1973 U.S. Code Cong. and Adm. News, pp. 1981-1982.
- (16) Supra Reference 14.
- (17) Loc.cit.
- (18) Ibid., pp. 4-5.
- (19) House Report No. 94-716, 94th Congress, 1st Session 22 (1975).
- (20) Public Law 94-280, Title II, § 202(6), 90 Stat. 451 (1976).
- (21) Loc.cit.

Section II

- (22) *First Annual Report On Highway Safety Improvement Programs*, House Document No. 94-41, 94th Congress, 1st Session 19 (1975); *Second Annual Report On Highway Safety Improvement Programs*, House Document No. 94-366, 94th Congress, 2nd Session 24 (1976).
- (23) *First Annual Report*, House Document No. 94-41, p. 19.

- (24) Loc.cit.
- (25) Ibid., p. 20.
- (26) *Second Annual Report*, House Document No. 94-366, p. 19.
- (27) *1977 Annual Report, Highway Safety Improvement Programs*, House Document No. 95-136, 95th Congress, 1st Session 20 (1977).
- (28) Loc.cit.
- (29) Supra Reference 1, p. 37.

Section III

- (30) Supra Reference 27, pp. 54-56.
- (31) Ibid., p. 55.
- (32) Ibid., pp. 54-56.
- (33) U.S. Department of Transportation, Federal Highway Administration, Office of Research and Development, Report No. DOT-FH-11-9129 (March 1977).

Section IV

- (34) U.S. Department of Transportation, Federal Highway Administration, *Fatal and Injury Accident Rates, 1975*, Table FTT-1, p. 26. 1976 figure is FHWA raw data (to be published in 1976 report).
- (35) Loc.cit.
- (36) Loc.cit.
- (37) Loc.cit.
- (38) National Safety Council, *Accident Facts 1977*, pp. 45-50.
- (39) Ibid., p. 50.
- (40) Ibid., pp. 45-46.
- (41) Supra Reference 34, Table ITT-1, p. 38. 1976 figure of 1,409,164 million vehicle miles is FHWA raw data (to be published in 1976 report).
- (42) Supra Reference 4. Fatality rate for 1976 is FHWA raw data (to be published in 1976 report).
- (43) Supra Reference 34.
- (44) B. J. Campbell and Donald W. Reinsurt, *Relationships Between Driver Crash Injury and Passenger Car Weight* (Raleigh: University of North Carolina Highway Safety Research Center, November 1973).
- (45) U.S. Department of Transportation, Systems Engineering, Report No. DOT-TSC-OST-75-21, *Analysis of the Future Effects of the Fuel Shortage and Increased Small Car Usage Upon Traffic Deaths and Injuries* (January 1976).
- (46) Ibid., pp. 1, 2, and xvi.
- (47) Figures developed from data contained in *Automotive News, 1977 Market Data Book Issue*, p. 46.
- (48) Loc.cit.
- (49) Supra Reference 45, p. xvi.
- (50) Supra Reference 1.

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ENERGY CONSERVATION IN GROUND TRANSPORTATION

A Comparison of Alternate Strategies



August 1977

**U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration
Office of Highway Planning
Washington, D.C. 20590**

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Energy Conservation in Ground Transportation:
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Office of Highway Planning
Urban Planning Division

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1. Introduction

The need for conservation of limited energy resources has become increasingly clear and has emerged as a national priority. Because the transportation of people and goods uses nearly half of the energy consumed in the United States, potential strategies to conserve transportation energy assume national significance. This paper identifies various conservation alternatives in the transportation sector and summarizes available estimates of their effectiveness. Broader considerations are also discussed, including impacts on mobility, the national economy, State tax revenues, and automobile safety and emission standards. The findings presented here are syntheses of available literature relating to each topic.

Total Direct Transport Energy (TDTE), the energy consumed in the movement of vehicles, comprises approximately one quarter of national energy consumption (26). Most of this consumption - 96.3 percent in 1974 - is in the form of petroleum and petroleum products. Transportation consumes approximately one-half of all petroleum used in the United States annually. The shares of both energy and petroleum consumption allocated to the transportation sector have remained very stable over the past 25 years (26).

A second component of transportation energy consumption is that which is used in the production of vehicles and facilities. This indirect transportation energy consumption is used in the manufacture of vehicle parts, tires, and equipment, petroleum refining, and highway, rail, and transit construction. An analysis of 1967 input-output data for the U.S. economy (35) indicates that 17.4% of national energy consumption in that year was for these purposes. While more recent data of this type are unavailable, the analysis suggests that total

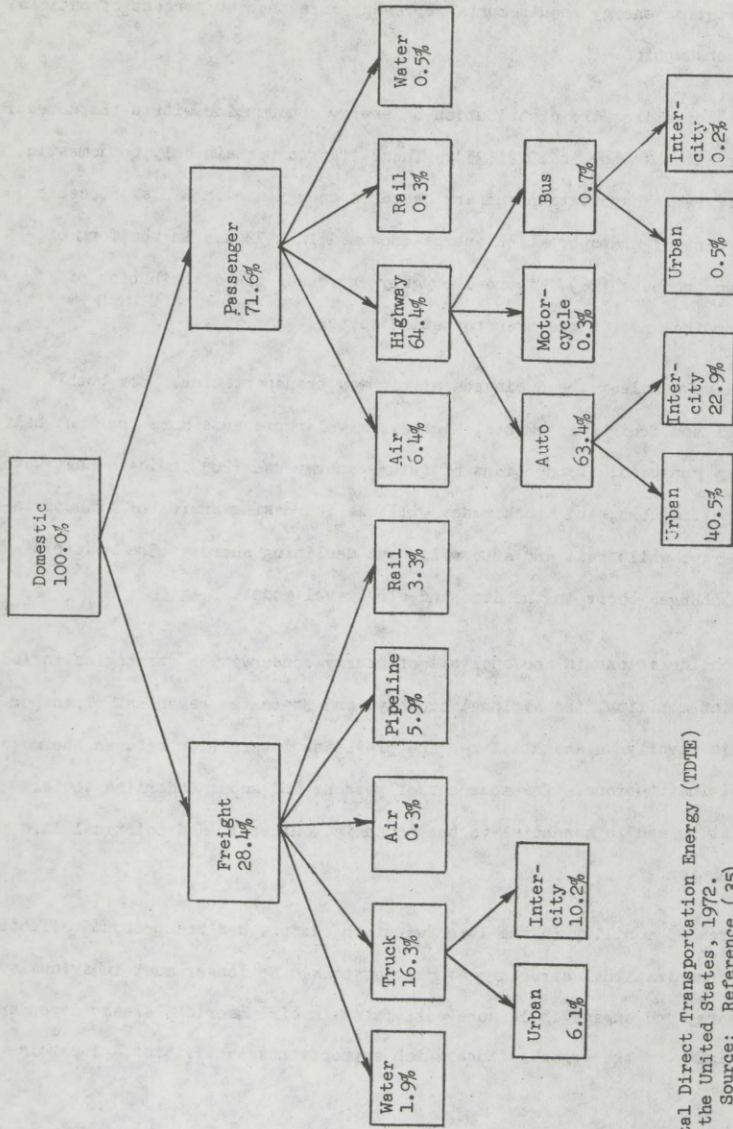
transportation energy requirements represent more than 40 percent of national energy consumption.

Figure 1 summarizes the distribution of energy consumption within the domestic transportation sector in 1972 (35). These figures pertain only to domestic, non-military transportation and are based on energy use in BTU's. Because 95.5 percent of transportation energy consumed in 1972 was in the form of petroleum products (26), Figure 1 roughly expresses the distribution of petroleum fuel use in the transportation sector.

Figure 1 makes clear the dominance of highway transportation. For both passenger and freight movements, highway travel represents more than one half of energy consumed. Projections of future energy use (26) indicate that water, air, pipeline, bus, and truck modes will use increasing shares of transportation energy, while rail and auto will have declining shares. The most pronounced changes occur in the auto and air travel modes.

Other considerations in the analysis of energy conservation strategies include impacts on mobility, the national economy, and State tax revenues. Transportation is clearly an essential service providing interaction between the major societal institutions. The movement of persons and goods underlies social organization and is essential to the economic, cultural, and political life of the nation.

The increased mobility in the late twentieth century has had profound effects on the organizational structure of many systems. No longer must individuals live, work, and engage in leisure activities in circumscribed areas, dependent on proximity to the organizations which support these activities. The rela-



Total Direct Transportation Energy (TDTTE)
in the United States, 1972.
Source: Reference (35)
Figure 1

tionships between transportation and societal systems are not unidirectional, however; once an urban area has been structured to promote certain activities, each individual requires mobility to compete for housing, employment, and social ties. Research on the transportation disadvantaged suggests that these individuals are less capable of obtaining satisfactory jobs and are constrained in their medical and shopping choices and in their capacity to enjoy a broad range of leisure pursuits. Any policy that would restrict mobility through major curtailment of transportation service must, therefore, be approached with caution.

Additionally, transportation-related expenditures comprise a significant portion of the Gross National Product (GNP). Changes in the demand for automobiles produce measurable impacts on the national economy. Any analysis of major adjustments in the transportation sector must include consideration of implications for the national economy.

State and Federal taxes provide approximately two-thirds of the total expenditures on highways. In many States, gasoline tax revenues comprise a substantial portion of total tax receipts. Major declines in gasoline consumption, therefore, generate secondary impacts on State governments that must also be considered.

Finally, the extent to which safety and emission standards for new automobiles have restraining influences on the development of more energy-efficient vehicles must be identified. Policies regarding safety, emissions, and energy consumption must be developed with an awareness of these interactions.

Section 2 of the paper presents the results and conclusions of this study. Section 3 discusses several approaches to transportation energy conservation

and summarizes estimates of their impacts. Secondary impacts on mobility, the economy, State finances, and safety and emission standards are considered in Section 4.

2. Results and Conclusions

This section is intended to serve as a summary of the major findings of the study. While all major points are included, discussion of each topic is minimized for the sake of brevity. Detailed discussions are found in Section 3, where necessary assumptions and caveats are presented.

A recurring problem in the attempt to compare alternative conservation strategies is the variety of assumptions used in the analyses found in the literature. Additionally, different time frames are used to estimate impacts. Some studies analyze the potential impact of a policy by considering changes in current or past consumption had the policy been in effect. Other studies analyze the changes in forecast consumption or growth rates brought about by the implementation of a policy. An attempt is made here to estimate the impacts of policies on energy consumption in 1985.

2.1 Automobile Efficiency - Because the automobile consumes almost two-thirds of domestic TDTE each year, an increase in automobile fuel efficiency emerges as the most significant opportunity to conserve transportation energy. Two approaches to increased automobile fuel efficiency are improvements in conventional technology and the development of new technologies.

2.2 Conventional Automobile Technology - Substantial fuel savings are available through improvements to conventional technology. For each model class, improvements are possible through engine redesign, power train changes, better aerodynamic design, and vehicle weight reductions. Reductions of 20 to 30 percent in domestic TDTE are estimated by 1985 through this strategy.

2.3 New Automobile Technology - Development of electric propulsion systems for the automobile can reduce transportation petroleum consumption by an

estimated maximum of 5.6 percent. Petroleum savings occur because alternative fuel sources are used in the generation of electric power. With current technologies, total energy consumption is approximately the same for both conventional and electric propulsion. The limited range and fairly high cost of electric vehicles limit them largely to the replacement of second and third cars in multi-car households. Their introduction into the automobile market on a large scale may, therefore, not occur for some time.

- 2.4 Shifts in the New Car Sales Mix - Significant fuel savings are possible through a shift in the sales mix of new cars towards the more fuel-efficient model classes. Both fuel price increases and taxes on fuel-inefficient new cars serve to increase demand for efficient autos and to encourage auto makers to produce a more efficient fleet. Where legislated fleet economy standards are already in place, these pricing policies have reinforcing effects. The savings are clearly not additive, however.
- 2.5 Ridesharing Programs - Priority freeway lanes and preferential parking for carpools and vanpools can significantly increase ridesharing in a limited number of areas. Various single-occupant auto disincentives are also effective. While energy savings can be major in selected areas and corridors for work trips, the national potential for savings is limited by the unsuitability of ridesharing programs for non-work travel. Estimated national savings are approximately 2 percent of domestic fuel consumption.
- 2.6 Highway Construction - Construction of new limited-access highways appears to have minor impacts on energy consumption. In urban areas, vehicles on new freeways move more efficiently than they would on surface arterials

because of the elimination of signals and intersections. In rural areas, fuel savings are dependent upon enforcement of the 55 mph speed limit on the new facilities. However, a substantial part of these savings is offset by the energy required to construct new limited-access highways.

- 2.7 Highway Maintenance - Improved maintenance and reconstruction of existing highways can improve vehicle performance and reduce fuel consumption.

Because these actions do not appear to increase VMT or travel speeds significantly, the savings are not offset to any large extent. Fuel-saving actions include the elimination of steep grades, sharp curves, and poor pavement. Without increased maintenance, pavement degradation alone is estimated to increase transportation energy consumption by more than 2 percent in 1985.

- 2.8 Traffic Control - Various traffic management strategies are identified as producing fuel savings. The national 55 mph speed limit, right-turn-on-red, one-way streets, and coordinated signalization of arterials can produce energy savings at relatively low cost. The combined impact of these approaches is estimated as a 1 to 2 percent reduction in transportation fuel consumption.

- 2.9 Mode Shifts to Bus Transit - A number of strategies, primarily transit fare reductions and service improvements, can increase bus ridership substantially. Those new riders who would otherwise be auto drivers represent energy savings at current occupancy rates and technologies. Total fuel savings are limited by the extremely small share of travel now carried by transit. Doubling or tripling this share (thereby increasing patronage by more than 100 or 200 percent) is estimated to produce a 2 to 3 percent savings in domestic transportation energy con-

sumption. This represents a maximum effort to increase ridership and strains the industrial capacity to produce buses.

- 2.10 Capital Grants to Mass Transit - Increased capital grants to mass transit systems appear to have negligible impacts on energy conservation. Because bus systems are largely labor-intensive, impacts on bus service are small. New rail transit systems do not appear to offer any energy savings. It has been argued that the total energy required for the construction and operation of new rail transit systems exceeds the requirements for the equivalent highway capacity.
- 2.11 Travel Demand - Three strategies to conserve energy through reduced travel demand have been identified: variable work hours, land use changes, and increased use of communications. Small savings are expected as a result of variable work hours, chiefly through lower demand in congested peak hours and increased transit use. Land use patterns are clearly important in total energy use. Some differences appear in the literature concerning the impacts of various land use configurations. The degree of sprawl of the urban population seems to be a key variable. The impact of polynucleated or cluster development is unclear and depends significantly on the degree to which a cluster can act as a focus of activities. Action to discourage continued sprawl development of urban areas could have significant long-run impacts. Savings through communication use are difficult to estimate because of limited experience. Some reduction in travel, especially for work-related trips, may be possible.
- 2.12 Transportation Supply - A cessation of the Federal Aid Highway Program is projected as having minor, possibly detrimental impacts on national energy consumption. Any resulting reduction in highway supply would

increase congestion in the peak and encourage some shift of travel to the off-peak. Congestion effects would, therefore, offset any savings produced by a reduction in travel. A large degree of price inelasticity in the demand for gasoline is clear. A 50 percent increase in the real price of gasoline is expected to produce a 5 to 15 percent reduction in consumption in the long run. This reduction is primarily from a shift to more efficient autos, rather than a reduction in travel. Large auto restricted zones may produce reductions in auto travel. Mode shifts to transit and increased carpooling have been observed. These savings are offset somewhat by longer travel distances for through trips diverted around the auto-restricted zone.

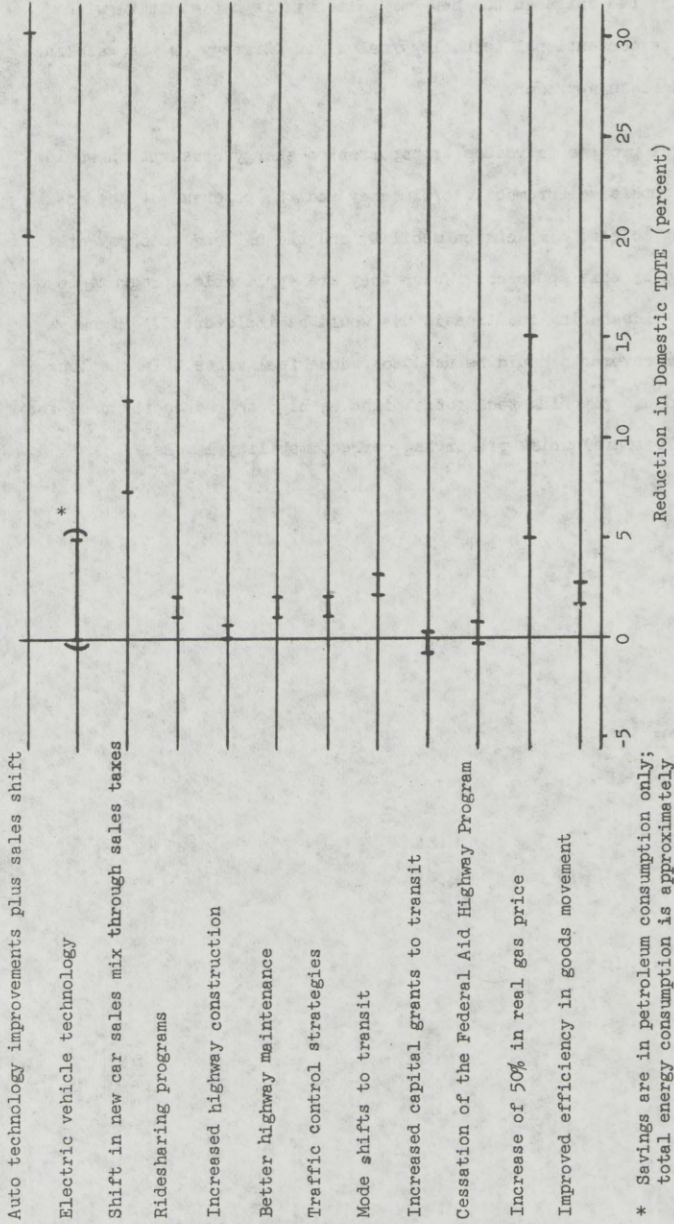
- 2.13 Goods Movement - Little energy conservation potential is perceived in a shift among freight transportation modes. Savings are possible through technological improvements, enforcement of the national 55 mph speed limit, electrification of certain railroads, regulatory reform, and increased load factors. New truck efficiency could be improved by as much as 18 percent within 5 years. An increase in load factors might save 1 percent of fuel consumption but is contingent on a large number of actions, both private and regulatory.
- 2.14 Mobility - An attractive feature of the most effective conservation strategy, increased auto fuel efficiency, is its minor impacts on mobility. Policies used to encourage auto efficiency may have some impact, however. Depending on its severity, gasoline rationing could impose restrictions on mobility.
- 2.15 The National Economy - Barring a serious crisis in the business sector, impacts on the national economy of conservation strategies appear small.

The automobile manufacturers must bear certain risks because of the necessary investment in the research, development, and production of improved technologies. Without a significant downturn in the business cycle, the auto industry appears capable of absorbing these risks.

- 2.16 State Tax Revenues - A serious problem develops in the declining growth rate of state gasoline tax revenues. Further inability of states to maintain existing highways would in itself have negative impacts on energy conservation. Relief appears necessary from both energy and financial perspectives.
- 2.17 Safety and Emission Standards - Safety standards tend to increase auto fuel consumption by increasing vehicle weight, especially in smaller cars. Emission standards also have some limiting impacts. However, several studies have estimated very substantial savings with automobiles that meet both safety and emission standards.
- 2.18 Summary - Figure 2 presents a comparison of the estimated effectiveness of the various strategies considered in this study. Because of the variety of assumptions and approaches used in the reports from which these estimates are drawn, this figure is intended only to give a rough comparison of expected impacts. Section 3 serves to qualify each estimate through a discussion of its derivation.

Impacts of the strategies summarized in Figure 2 are essentially additive, with three exceptions. Savings generated by a 50 percent increase in gasoline price cannot be added to the savings through conventional technology/sales mix approach. The gasoline price increase is expected to cause consumers to demand, and manufacturers to supply, more efficient autos. A large degree of overlap occurs between the two strategies.

Range of Estimated Transportation Energy Savings, 1965.



* Savings are in petroleum consumption only; total energy consumption is approximately unchanged.

A Comparison of Estimated Impacts
Figure 2

Similarly, the shift in the new car sales mix is not additive with either the conventional technology/sales mix strategy or the gasoline price increase approach.

A national program to reduce transportation energy consumption would ideally emphasize automobile efficiency and the purchase of the most efficient models. Impacts on mobility and the national economy are minimized by this approach. Where they are applicable, programs to increase ridesharing and transit use would be implemented. Highway system improvements could be used to reduce fuel waste. In the long run, land use planning techniques might be used to reduce the need for automobile travel while preserving current mobility levels.

3. Opportunities to Conserve Transportation Energy

A large number of strategies have been advanced as possible approaches to transportation energy conservation. These may be grouped into six classes of strategies:

1. Improvements in Automobile Fuel Efficiency
2. Increases in Automobile Occupancy
3. Improvements in Highway System Performance
4. Mode Shifts from Auto Driver to Transit
5. Reductions in Travel Demand
6. Increases in the Energy-Efficiency of Goods Movement

Each of these groups of strategies are evaluated in terms of their potential effectiveness. Savings are generally measured in terms of a percentage reduction in domestic transportation energy consumption. These savings relate to direct transportation energy consumption only. Indirect savings are also generated by most of the strategies through reduced need for fuel refining and distribution as well as some reduction in the manufacture of vehicles, parts, and tires. Other savings of indirect transportation energy consumption may arise through increased refinery efficiencies and the introduction of longer lived passenger cars and light trucks. None of these savings are considered because they are not direct results of the energy conservation strategies.

3.1 Improvements in Automobile Fuel Efficiency

Because some 63 percent of domestic transportation fuel consumption is for automobile travel, significant fuel savings can be realized through improved automobile fuel efficiency. Average automobile fleet fuel efficiency declined substantially through the early 1970's, largely as a result of increased

vehicle weight and pollution emissions standards. Improvements of some 4 to 5 mpg have been realized since then, however.

There are several approaches to improved automobile fuel efficiency:

- vehicle weight reduction
- increased maintenance efforts
- better aerodynamic design
- improved power train technology
- improved engine technology
- shifts to other technologies

3.1.1 Conventional Technology

Short run fuel-efficiency improvements are available through weight reductions, aerodynamic design, and better maintenance. Smaller short term savings can also be achieved through an increase in the use of radial tires and a reduction in the number of engine-driven accessories, especially air conditioning. Longer term improvements include redesign of gasoline engines and the development of diesel, stratified charge, and hybrid engines.

Several efforts have been made to quantify the potential fuel savings from the various strategies outlined above. One such effort (9) analyzes the potential savings from short- and mid-term technology improvements that could be implemented within 6 years on at least 10 percent of the new cars sold. Modest, off-the-shelf improvements are estimated to improve fuel efficiency 30 percent over a 1973 test vehicle. More advanced designs, using stratified charge and light-weight diesel engines, achieve 55 percent and 70 percent increases in fuel efficiency, respectively. The advanced designs are estimated to increase

new car prices by some \$400 while the modest improvements have little impact on price. Current emission standards are considered in the estimation of attainable fuel economy.

A similar study (35) over a longer time frame also finds very significant potential savings. Gradual improvements in vehicle design (including weight reduction, transmission improvements, and better engine technology), along with a shift in the fleet mix to smaller cars, are estimated to improve gas mileage to 24.8 mpg by 1985, compared to a 13.5 mpg average for 1972. Both safety and emission standards are included in the computations. The estimated additional capital investment required for such a program is \$200 million per year, compared to a current level of capital investment in the industry of \$2.0 to \$2.5 billion per year. A reduction of 38 percent in the fuel consumed in passenger cars in 1985 would result from the expected efficiency increases. This corresponds to a 25 percent reduction in domestic TDTE.

Comparable estimates of fuel savings from improved automobile fuel efficiency are provided in other studies. One paper (26) estimates that engine tune-ups can increase efficiency by some 10 percent for a poorly maintained engine, while discontinued use of auto air conditioning can contribute an additional 10 percent savings for individual vehicles at certain times. (Another analysis (35) points out, however, that the incentive to increase the frequency of engine tune-ups is small since a price of nearly \$2 per gallon would be needed for fuel savings to offset the average cost of an additional annual tune-up.) A final estimate (29) of attainable savings is a 30 percent reduction in the fleet average gasoline consumption by the early 1980's through technology improvements.

3.1.2 New Technology

Renewed interest in electric vehicle technology has produced about two dozen experimental vehicles which have been used as a means of comparison with conventional internal combustion engines (48). Electric vehicles are characteristically powered by lead-acid batteries, have a driving range of 20 to 50 miles, and display rather poor road performance. Major advantages of electric propulsion include independence of petroleum resources, centralized power generation, and elimination of idling losses. Disadvantages are a relatively low range, long "refueling" times, potential safety and handling problems, and higher costs.

In terms of total energy consumption, electric vehicles and conventional automobiles are very similar. The major advantage of the electric vehicle is that electric power is generated from a number of fuel sources other than petroleum. Based on the current distribution of sources of electric power generation, electric vehicles could obtain 80 percent of their energy requirements from non-petroleum sources.

Because of their fairly high cost, electric vehicles do not appear any more accessible to low income families than conventional automobiles. In addition, one-car families are not expected to replace their autos with electric vehicles because of their limited range. Therefore, electric vehicles in the near future are viewed only as potential replacements for second and third cars owned by a household. An attempt to estimate an upper bound on the potential petroleum savings through such a substitution has been made (16). Assuming that all trips of less than 30 miles round trip distance could be made with electric vehicles, some 37 percent of total 1975 VMT could have been replaced

with electric vehicles. However, only those households owning more than one automobile are likely to purchase an electric vehicle. Since 30 percent of all households owned two or more autos in 1975, an estimate of 11 percent is obtained for the maximum potential share of VMT that can be attracted to electric vehicles. This corresponds roughly to an 11 percent decrease in automobile fuel consumption, a savings of 6.9 percent of total domestic fuel used in transportation. This is offset somewhat by the petroleum used to generate approximately 20 percent of the electric power used. A maximum net savings of 5.5 percent of petroleum consumed in transportation results. To the extent that second and third automobiles are not replaced, these savings are reduced.

3.1.3 Shifts in the Vehicle Mix towards More Efficient Automobiles

Auto manufacturers expect to meet the 1985 standard of 27.5 mpg average fuel efficiency on new cars through two mechanisms: technological improvements and a shift toward purchases of smaller cars. At least two policies have been identified that encourage the shift to smaller cars. One recent study (42) considers the impact of fuel economy excise taxes. The model used analyzes the tax impacts on both the supply of and demand for new cars, used car scrappage rates, fuel economy by market class, the new car sales mix, and average fleet economy. The policy considered levies an increasing tax on inefficient new cars. No taxes are levied after 1981. Fuel consumption savings of 7.5 percent in 1981 and 12.5 percent in 1985 are estimated to result from a shift in the new car sales mix. Owners of large, inefficient autos are predicted to resist a shift to smaller models and, therefore, retain their present autos for a longer period. As a result, new car sales decline every year to a maximum of 7.3 percent decrease in 1981 versus a no-tax baseline.

Another analysis (39) investigates the impact of fuel taxes on energy consumption, primarily with respect to mode shifts to transit. The largest long-range effects are attributed to the purchase of more fuel efficient automobiles, rather than increased transit use. Increases in average fleet fuel efficiency of 10 to 15 percent are estimated to result from a 50 percent increase in the real price of gasoline.

3.2 Increases in Automobile Occupancy

Increased auto occupancy, passenger-miles of travel per vehicle-mile of travel, is an apparent source of substantial fuel savings. Any significant increase in auto occupancy would clearly have a major impact on vehicle-miles traveled and energy consumption. The realization of such an increase may be difficult, however. The only approaches to occupancy increases that have been demonstrated effective are ridesharing programs for work trips. The impacts of similar programs for non-work travel are limited by the wide dispersion of origins, destinations, and times of day for non-work trips.

The environmental benefits of increased ridesharing for work trips are greatest in the areas of congestion and parking relief, and related reduction in pollutant emissions. Experience in several cities has demonstrated that measurable fuel savings are also produced.

3.2.1 Incentive Programs

There are a number of incentive programs available to increase vehicle occupancy for work trips. While only limited experience has been attained with most, some indications are clear.

a. Reserved Lanes and Roadways

The I-35W corridor in Minneapolis-St. Paul provides metered ramp freeway access for carpools and buses. Annual gasoline savings are estimated at 250,000 gallons, a significant proportion of the fuel consumed in the corridor (47).

The potential combined effect of the San Bernardino and Santa Monica reserved lanes in the Los Angeles urban area is estimated as 4,150,000 gallons of gasoline per year.

While fuel savings are significant in terms of consumption in the corridor for both cases, the savings as percentages of region-wide fuel use are extremely small.

b. Preferential Parking Policies

Where parking availability is limited - such as in dense employment areas - the preferential treatment of carpools and vanpools in the assignment of parking spaces has been very effective. For large employers, this policy has attracted 20 to 50 percent of the employees to carpools.

Similar results have been obtained with parking cost subsidies for carpools in areas where parking is expensive.

c. Carpool, Vanpool, and Buspool Matching Programs

The provision of mechanisms through which pools can be formed appears to be ineffective in the absence of other incentives. Their use in combination with other incentive programs is important in promoting the formation of carpools. The provision by large employers of vehicles for vanpools has been extremely effective in the promotion of ridesharing.

d. Differential Tolls

In the few areas in which differential toll policies have been implemented, little impact has been observed on the formation of carpools or vanpools.

3.2.2 Single Occupant Auto Disincentives

In addition to the incentive programs above, several other actions are expected to encourage the formation of carpools by making single-occupant auto travel less attractive. Two recent studies have investigated the potential impacts of single-occupant auto disincentives, both alone and in conjunction with one or more carpool incentive programs. The types of disincentives considered can be classed into general categories.

a. Parking Disincentives

Elimination of parking subsidies by employers together with parking surcharges are expected to increase the rate of carpool formation by making carpools and vanpools less expensive when compared to the drive alone option. Surcharges might be applied to all vehicles or to non-carpool vehicles only.

b. Operating Cost Disincentives

One of the expected responses to substantial decreases in the availability of gasoline (through increased prices and/or rationing) is greater participation in carpools. Again, the increased vehicle occupancy reduces the operating cost to each carpool or vanpool member and increases the attractiveness of ridesharing as opposed to driving alone.

c. Travel Time Penalties

Both in-vehicle and out-of-vehicle time penalties may be imposed on single-occupant autos to effect an increase in ridesharing. Out-of-vehicle penalties are generally related to parking location, while in-vehicle penalties may be imposed by restricting freeway or surface arterial lanes to multiple occupant autos.

Two different approaches have been used to examine the effectiveness of disincentives. One study (31) uses the responses to a questionnaire survey of three major cities to evaluate impacts on regional VMT. The most effective strategies identified are those which 1) cause significant (20 percent) increases in drive-alone times with similar concurrent decreases in carpool times, 2) restrict gasoline availability, and 3) significantly increase gasoline price. Each of these strategies are estimated to reduce regional VMT by more than 4 percent. Less effective strategies, those decreasing VMT by

1 to 4 percent, include actions which cause 1) increased parking costs, 2) small increases in gasoline price, 3) significant increases in drive-alone times, and 4) significant decreases in carpool times. Policies decreasing regional VMT by less than 1 percent are 1) toll surcharges and 2) carpool rebates. In all cases, the study shows no significant VMT produced by a car left at home because of participation in a carpool.

A second study (2) uses a set of behavioral travel models to analyze various policies. Gasoline rationing and a large increase (300 percent) in gasoline prices are estimated to have the greatest impact. Smaller but significant impacts arise from a 100 percent increase in gasoline prices and a very large areawide parking surcharge. Minor impacts are generated by smaller parking surcharges. Gasoline availability emerges as most effective because it reduces non-work travel as well. One-quarter to one-third of the work VMT reduction caused by other policies is offset by increases in non-work travel with automobiles left at home.

These results indicate that measurable savings in fuel consumption are possible through concurrent ridesharing incentive programs and single-occupant auto disincentives. The most effective disincentives act not only to promote ridesharing but also to reduce the total demand for travel. The savings generated by increased vehicle occupancy alone are, therefore, only a component of the total savings. The difficulty in decreasing fuel consumption through ridesharing for work trips alone is emphasized in another study (35). The analysis demonstrates an increase in the commuter participation rate in carpools from 25 to 50 percent would have saved approximately 2.6 percent of domestic TDTE in 1973. However, 50 percent is described as the "highest

achievable" participation rate because only those commuters with common origins, destinations, and travel times can form carpools. Thus, a 2.6 percent savings can be achieved only if all commuters who could possibly form a carpool choose to do so. Expected savings are, therefore, somewhat less.

Another analysis (21) indicates that an increase in average auto occupancy from 1.8 to 2.0 passenger per vehicle for all travel would reduce VMT, energy consumption, and pollutant emissions by some 4 percent. Assuming that auto occupancy for non-work travel is insensitive to any ridesharing programs, this increase could be achieved only through ridesharing for work trips. However, an average auto occupancy of 2.0 would require that ridesharing increase dramatically and "implies a return to carpooling equivalent to that occurring in early wartime," March 1943.

3.3 Improvements in Highway System Performance

Increases in the efficiency of vehicles operating on the highway system can be obtained through improvements in the system as well as in the vehicles. System changes can be grouped into three categories: 1) new construction, 2) maintenance and enhancement of existing facilities, and 3) better use of traffic control options.

3.3.1 New Highway Construction

The provision of a limited access highway reduces the energy consumption of traffic diverted from surface arterials to the new highway. This impact depends to some degree on whether the highway is in an urban or rural area. In urban areas, fuel savings occur largely through the elimination of much of the continuous acceleration and deceleration that occurs on urban surface arterials. Fuel consumption on urban freeways is estimated in one study (15) as 20 percent lower than on other urban highways. These fuel savings are offset to some (uncertain) extent by additional VMT induced by the new highway facility. Net savings are estimated as 0.9 percent of domestic TDTE as a result of completion of all urban segments of the Interstate system.

In rural areas, where VMT increases appear insignificant, the change in fuel consumption depends on the speed of travel on the new facility. With a high speed limit on the new freeway, fuel consumption is estimated (15) to increase because of the reduced fuel efficiency of vehicles traveling at high speeds. With a 55 mph speed limit, however, substantial fuel savings are found.

Frequently ignored is the amount of energy used in the construction of highways, a substantial cost when compared to the energy used by vehicles operating on

the highway facility. A large portion of the fuel savings over the life of the facility are therefore offset by the energy used in highway construction. Net savings from new highway construction appear to be less than 1 percent of domestic TDTE.

3.3.2 Maintenance and Enhancement of Existing Facilities

Reconstruction of existing highways offers measurable improvements in vehicle efficiency. An analysis (1) of the fuel efficiency of automobiles on various highway conditions (hills, curves, broken pavement) gives some indication of the degree of improvement that is possible. For example, at 40 mph the total impact of an 8 percent upgrade followed by an 8 percent downgrade is to increase fuel consumption by some 48 percent over the same distance on a level highway. A 10⁰ curve at 40 mph also increases fuel consumption by an estimated 48 percent. Finally, pavement condition also affects fuel efficiency. At 40 mph fuel consumption increases by 34 percent on badly broken, patched asphalt as compared to high quality pavement. Potential fuel savings from increased maintenance efforts nationwide are difficult to estimate. They appear substantial, especially in urban areas, because of the large volumes of traffic occurring on a relatively small portion of the system.

Another study (15) estimates the fuel efficiency improvements resulting from reconstruction of typical rural highways. For reconstruction approximating the original alignment, fuel efficiency increases range from 2.9 percent to 5.8 percent. The same study cites pavement deterioration as a potential source of fuel waste in the immediate future. With a few apparently conservative assumptions, it is demonstrated that if pavement deterioration continues to exceed repavement efforts at current rates, vehicle efficiency in 1985 could be decreased by approximately 2.4 percent through pavement conditions alone.

The fuel savings resulting from better maintenance do not appear to be offset by either higher travel speeds or increased VMT. Maintenance serves to improve the performance of vehicles already on the system without attracting further vehicles or permitting significantly higher speeds.

3.3.3 Traffic Control Strategies

A number of traffic control actions have been advanced as energy-saving strategies. Most of the analysis of these actions has been done at a very detailed level - intersections and queuing, for example. Estimates of national impacts are somewhat tenuous because they require a large number of assumptions to extrapolate the detailed results.

a. National 55 mph Speed Limit

The national 55 mph speed limit attempts to restrict vehicles to a more fuel-efficient operating range. Full compliance with the speed limit is estimated to save 1.7 percent of total highway fuel consumption (35). Sixty percent compliance is estimated to reduce savings to 1.0 percent. Most of these savings occur on rural interstates with somewhat lower savings on other rural roads and on urban freeways. A second estimate (29) projects fuel savings of 1.9 percent of total consumption in 1985. A third paper (15) estimates that continued enforcement of the speed limit will reduce fuel consumption on the completed Interstate system by 10 percent.

b. Right-Turn-on-Red

While little empirical data is available, one study (1) attempts to use computer simulation of highway intersections to evaluate the right-turn-on-red policy. The conclusions indicate that the policy offers measurable

fuel savings. Simulation of the Washington, D.C., network indicates a savings of 2.6 percent throughout the system. National savings are estimated at 0.25 percent of direct fuel consumption assuming 80 percent of all intersections have a permissive right-turn-on-red rule. Another paper (15) estimates national savings as 0.13 percent.

c. One-Way Streets

Computer simulation of portions of highway networks is used in another study (20) to estimate the fuel-saving potential of the conversion of two-way streets to one-way. The network used shows improved performance but experience with the model indicates that the interactions are very complex. A case-by-case analysis of proposed implementation is recommended.

d. Signalization

Additional computer simulations have been used (20) to evaluate various signalization policies in terms of energy consumption. Volume-activated signals are found to offer significant savings on major arterials in certain situations. Savings are greatest where the volume of cross traffic is low in comparison with the traffic on the artery. The most energy-efficient cycle length for traffic signals is approximately twice the optimal length for delay savings for some networks. This result seems to be highly dependent on volumes, flow patterns, and network configuration. Interconnected progressive signalization also appears to hold significant potential in certain applications. An analysis of pedestrian movements at intersections is also presented. The results indicate that a pedestrian scramble system - where all signals are red to permit pedestrian crossings in all directions - does not conserve fuel. The savings in pedestrian interference with turning movements are more than offset by the fuel wasted during the extended idling periods.

None of the above analyses consider any changes in VMT as a result of system changes. To the extent that volumes are increased by level of service improvements, any fuel savings are decreased. This possibility is advanced in one study (21) which recommends concurrent auto disincentives and transit promotion in addition to system improvements.

3.4 Mode Shifts from Auto Driver to Transit

At current occupancy levels, operating energy requirements for automobiles are an average 6750 BTU's per passenger-mile (43). Bus requirements are significantly less at approximately 3000 BTU's per passenger-mile. Rail transit exhibits the lowest requirements, an average 2250 BTU's per passenger-mile. A significant potential appears to exist in significant shifts of auto drivers to either bus or rail transit. A number of policies to increase transit use are available:

- transit fare reductions
- transit service improvements including reserved lanes
- transit capital improvements
- various auto disincentives designed to promote transit

Each of these strategies are evaluated for their effect on transit ridership and the resulting change in energy consumption.

3.4.1 Transit Fare Reduction

The reduction or complete elimination of transit fares is an obvious approach and has been attempted in several cities (36). In general, the standard estimate of a 0.33 percent loss in bus ridership for each 1 percent increase in fares appears to hold in the reverse case of fare decreases. A significant amount of variation occurs between 0.15 and 0.6 percents gain in transit ridership for each 1 percent decrease in fares. Much of this variation occurs because of significant changes in service in some cities at the same time that fare reductions are introduced. Additionally, rail transit appears least sensitive to fare changes, conventional bus transit somewhat more, and feeder bus service most sensitive. The complete elimination of fares is

estimated to increase ridership by some 30 to 40 percent. Experience has indicated that 30 to 50 percent of the new riders would have otherwise been auto drivers. The remaining new transit passengers are diverted from walking for short trips and, to some extent, are making trips not previously made.

A second study (39) suggests that long run impacts of free transit may be somewhat higher. The increase in ridership generated by fare elimination would eventually require additional service and, consequently, increased frequency. The resulting higher level of service would be expected to further attract new riders. Total ridership increase is estimated at 60 to 80 percent. Again, somewhat less than half of the new riders are diverted from single-occupant autos.

A modeling approach is taken in a third report (5) to evaluate free transit service. Fare elasticities of -0.32 for shopping trips and -0.17 for work trips are estimated. Even a significantly improved and less expensive transit system is predicted to remain an unattractive alternate to automobile travel.

3.4.2 Transit Service Improvements

All of the sources mentioned in the previous section also consider transit service changes and their impacts on ridership. The first study, (36) summarizing several other sources, indicates that an average 0.5 percent ridership increase might be expected from a 1 percent increase in service frequency. Again, large variations have been observed, depending largely on the income levels of the market served and on prior service frequency.

The second source (39), estimates that a maximum effort in the manufacture of buses might double the number of available transit buses in 1980 compared to

the 1974 fleet. This fleet expansion would permit increases in frequency and expansion of the coverage area that could increase patronage by some 30 percent. The portion of these new riders that are diverted from single-occupant autos would probably be higher than in the reduced fare case since auto drivers are typically more sensitive to level of service rather than cost.

Finally, the third study (5) uses the computed elasticities of ridership changes in response to fare and service changes to compare their relative effectiveness. Transit demand is identified as being "much more responsive" to improved travel times (both access and line-haul) than to fare reductions. Service improvement elasticities for work trips are estimated as -0.71 for access times and -0.39 for line-haul times.

The exclusive busway offers significant potential savings because buses on their own right-of-way are among the most energy-efficient transit operations. The obvious limitation of such service is that it can be provided only in those corridors where demand is sufficient to support it. Buses operating in the Shirley Highway Bus Corridor in Washington, D.C., are estimated (43) to save 0.1 percent of regional transportation fuel use. As emphasized in another report (39), the number of corridors in the United States where exclusive bus service can be instituted is quite small. Impacts on national energy consumption, while positive, would be extremely small.

3.4.3 Transit Capital Improvements

The construction of new rapid rail transit systems is either in progress or under consideration in several cities in the United States. The comparative energy efficiencies of automobiles and rail transit would seem to indicate that large savings in fuel consumption would result.

A detailed study of the energy-related impacts of transit capital investments has been performed (4). The impacts of a significant increase in Federal capital grants to mass transportation are found to depend on three relationships:

- 1) the effectiveness of the grant program in bringing about improvements in transit fares and services
- 2) the ability of transit to attract riders from the automobile through these improvements
- 3) the relative energy efficiencies between the automobile and transit systems

Federal grants have largely been used in the bus sector for the replacement of existing equipment, rather than the expansion of service. This results largely from the large share of bus operating costs attributed to labor which are not covered by capital grants. Use of capital grants for bus replacement does free revenues for other purposes, such as fare reductions. However, the relatively small cost of annual equipment replacement minimizes the total impact of capital grants on bus operations. Additionally, as discussed above, fare reductions are not particularly effective in attracting auto drivers to transit.

Rail transit, which is significantly more expensive and capital-intensive than bus transit, usually replaces existing bus service. A very large share of the transit riders are, therefore, diverted from buses. Long established rail transit systems operated approximately three times more efficiently than the average auto. Newer systems, such as BART in San Francisco and the Lindenwold Line in Philadelphia are substantially less energy-efficient (12) than previous rail transit. Contributing to their increased energy use are the less compact

and dense service areas, increased operating speeds, and the increased number of amenities. If construction energy is considered, one paper (25) argues that new rail transit construction is less energy efficient than freeway construction in terms of total passenger miles served. While this argument is dependent on several assumptions, it does emphasize that new rail transit systems do not offer significant fuel savings compared to auto travel.

The same indication comes from preliminary estimates on the energy consumption of the BART system based on initial operation (30). In terms of propulsion energy alone, BART operations in 1975 were significantly less energy efficient per seat-mile of service than express bus or conventional fixed route bus service. The differences are more pronounced if total operating energy (for stations, etc.) is included. More importantly, BART's total operating energy per seat-mile actually exceeded the current requirements of a subcompact automobile. The completed BART system is projected to be somewhat more energy efficient. It would remain less efficient than both express and conventional bus service while becoming somewhat better than a subcompact auto.

3.4.4 Auto Disincentives Designed to Promote Transit

A final approach to increased transit ridership is the use of various automobile disincentives. Several types of restrictions on automobile access to designated zones have been proposed. Additionally, changes in both the cost and availability of parking as well as further increases in the price of gasoline could be used to reduce the attractiveness of auto travel.

A summary of the limited experience with auto-restricted zones (24) indicates that some increase in transit ridership can be expected. This depends to a great extent on the quality of transit service and the size of the auto-

restricted zone. Studies of parking cost increases (36) have suggested that where transit service is good, significant increases in transit ridership may result. Another source (39) estimates that a \$1.50 per day increase in parking costs in areas well served by transit would increase daily ridership by 15 to 20 percent, largely in the peak. To be effective, these prices would have to extend to the significant number of employees who currently park free in the CBD. Finally, one estimate (39) of transit sensitivity to gasoline price is that a 50 percent rise in the real price of gasoline would increase ridership by 30 to 50 percent over a period of six years.

3.4.5 Energy Savings through Increased Transit Use

The maximum estimated impact on transit ridership identified above is a 60 to 80 percent increase as a result of universally free transit service. It remains to estimate the potential energy savings through mode shifts to transit. A clear consensus emerges from a number of sources.

One paper (15) estimates the relative effectiveness of alternative approaches to energy conservation. Doubling the share of travel carried by transit in 1980 would produce approximately one-twelfth the savings that would result from a 40 percent increase in new car fuel efficiency. Thus, an increase in transit ridership of more than 100 percent has an estimated impact that is an order of magnitude lower than relatively modest gains in automobile efficiency.

This order of magnitude difference also appears in a second study (39). A maximum auto restraint package (gas and parking price increases) is compared to a maximum transit incentive package (no fares and a doubling of the transit fleet). Energy savings are estimated as ten times higher for the auto restraint package.

Similarly, another source (26) estimates the savings produced by an increase in new car fuel economy to 22 mpg in 1985 as eleven times greater than tripling the transit share by that year. Since a standard of 28.5 mpg has been set for 1985, the relative effectiveness of this approach will be even greater. Clearly, the small share of travel currently or potentially attracted to transit limits the potential energy savings. National energy savings of 2 to 3 percent appear to be the maximum impact of increased transit use in the near future.

3.5 Reductions in Travel Demand

Several approaches have been advanced that would conserve transportation energy by reducing the number of person trips. Three of these strategies, communication substitutes, variable work hours, and land use changes, reduce travel by modifying demand. Three other policies, reduced system supply, reduced gasoline availability, and automobile restrictions affect the "supply" of transportation service.

3.5.1 Substitution of Communication for Travel

The purpose of many trips is, to some extent, communication with other people. Better utilization of communication facilities might be expected to reduce travel demand. Current measures of communications use have increased parallel to the increase in travel demand. One source (21) suggests that this indicates that travel and communications are complimentary services. However, communication and travel could also be viewed as substitutes, competing for shares of an increasing demand for interactions among people and businesses. It is very likely that some travel and communications are complimentary while others are substitutes. No experience and little research is available to estimate the potential savings of increased communications use.

3.5.2 Variable Work Hours

Variable work hours programs are frequently proposed for reducing peak hour travel demand. Additionally, an improvement in the peak to off-peak ratio would make possible better use of transit facilities. Experience in Ottawa, Canada (39) indicates that staggered work hours may slightly increase transit patronage. Additionally, no adverse effect on the rate of carpooling has been

observed (36). Some small benefits in fuel savings may, therefore, be expected from variable work hours programs, largely through reductions in traffic congestion. Extremely limited experience prevents any attempt to estimate the magnitude of the fuel savings.

3.5.3 Changes in Land Use

Various land use configurations are accepted as having major impact on travel demand. The direction of the impact on energy consumption is subject to some debate. One reference (12) uses computer simulations of prototypical cities to assess energy consumption. In general, and as expected, sprawling land use patterns generate more fuel consumption than compact patterns. The most important determinants of energy consumption are shown to be the distributions of population and employment. The most energy efficient city is one with concentrated, concentric distributions. The least efficient city appears to have a fairly concentrated employment distribution with a diffused population. Population distribution is found to have a larger impact on energy use than employment distribution. Polynucleated cities are also examined. They are found to be only slightly less efficient than the best configuration.

Cluster development is advocated in three other studies (39, 10, 45) as a means of energy savings. The consensus appears to be that, since urban areas will expand in any case, the encouragement of cluster development will minimize the damage done in terms of energy consumption.

Implicit in the advocacy of cluster development is the assumption that residents in a cluster will center most of their activities, including work, around their own cluster. Limited experience in cluster development has shown that this

assumption may not hold. Indications from exurban clusters near London (21) and Washington, D.C., (24) suggest that residents do not confine their activities to their cluster. Work trip distance in particular may actually increase as long trips are made to employment centers in the neighboring city.

3.5.4 Reduced System Supply

The frequently made assertion that new highways generate more travel leads to the suggestion that the supply of highway facilities be reduced in order to limit travel. An analysis (4) has been done of the impacts of a cessation in the Federal Aid Highway Program (FAHP). An upper bound is placed on the expected savings by making two assumptions: 1) the reduction in highway capacity does not increase congestion; and 2) the reduction in peak hour travel is not partially offset by an increase in off-peak travel. Three important considerations are identified:

- 1) research has indicated that Federal funds have been used in place of, rather than in conjunction with State highway funds; therefore, States would be expected to increase their funding levels to replace the Federal funds;
- 2) in spite of the magnitude of the funds involved, the importance of the facilities in question is small in comparison to those facilities already in place;
- 3) because highways are designed for peak-hour volumes, a reduction in capacity affects only peak-hour travel which constitutes only 20 to 30 percent of total demand.

The expected travel on the additional highway capacity resulting from continued Federal aid to urban highway construction through 1989 is 12.4 billion VMT. Since the capacity is used fully in the peak-hour only, the simplifying assumptions are used to eliminate 12.4 billion VMT.

This represents 1.3 percent of the projected 977.4 billion VMT on urbanized area highways in 1989. An estimated 0.5 percent of total national fuel consumption would be saved as a result.

Relaxation of the two assumptions, through analyses of congestion effects on auto efficiency and of travel by time of day, leads to different results. A slight increase in energy use is predicted, largely as a result of decreased operating efficiency at congested speeds and a reduction in auto occupancy. Thus, an end to Federal aid to highway construction is estimated to have a maximum impact of 0.5 percent reduction in fuel consumption by 1989. A more realistic projection, however, is a slight increase in energy use.

3.5.5 Reduced Gasoline Availability

The constriction of gasoline supplies in 1973-74 has provided some data on the reaction of travelers to reduced fuel supplies. Surveys in two cities were conducted to identify short-run changes in travel behavior (10, 34). Non-work travel is found to have been most sensitive to the shortage. Non-work trips were made with lower frequency and to nearer destinations. Additionally, more non-work destinations were included in each trip away from home. Changes in work trips were predominantly shifts in mode from auto to transit. In both cases, the restricted availability of gasoline had a much larger impact than the increases in its price. The apparent high degree of price inelasticity leads to the conclusion that major changes will result only from excessive increases in price or an extended period of fuel supply restrictions. Moderate, gradual increases in price are expected to have little impact (10).

Short-run price elasticities for gasoline are typically estimated in a range of -0.1 to -0.3 (27) at current price levels. This response is observed in

the decreased rate of VMT growth since the gasoline price increases in 1973-74. Longer term elasticities are difficult to compute because they must include such additional considerations as land use development and fuel efficiency of new automobiles. In any case, several sources indicate an opinion that gasoline demand will continue to be highly unresponsive to price increases (36, 37, 39). Real price increases of 50 percent are expected to reduce short-run gasoline consumption by 5 to 10 percent (39), largely through increased fuel efficiency of automobiles.

3.5.6 Automobile Restricted Areas

Various policies that would in some way restrict automobile use in designated sections of an urban area have been proposed and implemented. These policies include road pricing, parking restrictions and surcharges, and complete prohibitions of autos. The outright prohibition of automobiles would be expected to have the most significant impact if enacted over a sufficiently large area (21). Estimates of energy conservation (through decreased VMT) range from 4 to 7 percent (36). A 31 percent reduction is forecast for Los Angeles on the basis of an extremely severe package of constraints. Responses include shifts to transit, shifts of traffic to adjacent areas, and choices of new destinations. Only the first is likely to produce significant energy savings. It is important to note that most enacted auto restraint policies covering large areas are found in cities outside of the United States which have comparatively large transit shares. Whether a major shift to transit would result in an American city has yet to be demonstrated. Without such a shift, the severe economic impacts on merchants and businesses that have been avoided elsewhere are more likely to occur.

3.6 Increases in the Energy-Efficiency of Goods Movement

Goods movement represents approximately 28 percent of all domestic transportation fuel consumption and, therefore, merits attention with respect to energy conservation. An early analysis of freight movement energy use (28) gives some perspective on trends in the industry. The energy consumed per ton-mile of goods movement has been increasing, largely because of shifts to less energy-efficient modes. Air shipments in particular have contributed significantly to increased energy use. The long-term impact of increasing energy prices would affect the energy-intensive modes more heavily. Increased shipping costs are, therefore, expected to make air shipments less attractive. Given present modal distributions, all mode changes are expected to be minor except for a significant shift away from air shipments.

3.6.1 Improved Vehicle Efficiencies

Because mode shares appear to be relatively stable in the long run, energy-saving strategies in the freight sector are largely related to vehicle efficiency and load factors. Technology improvements along with some change in the sales mix are estimated in one study (35) to potentially increase new truck fuel efficiency by 18 percent by 1980. The national 55 mph speed limit also increases truck fuel efficiency, contributing significantly to the 1.7 percent total increase for all vehicles. System performance improvements introduce fuel savings similar to those produced for auto travel. Electrification of railroads and new electric propulsion technology are identified (35) as potential means of reducing 1990 transportation fuel consumption by 0.6 percent. These savings are petroleum savings only, since the energy efficiencies of electric and diesel propulsion are virtually the same. Total energy consumption is, therefore, approximately the same in either case.

3.6.2 Increased Load Factors

One direct way of increasing load factors is to increase the limits on the size and weight of trucks. One estimate (35) indicates that a 10 percent increase in these limits would have decreased fuel consumption by 0.37 percent in 1972. A similar decrease would be expected after any year in which this policy became effective. These savings might be offset somewhat by the accelerated deterioration of highway pavements as a result of higher loadings.

Another study of local trucking operations (32) indicates that more careful routing of trucking service could increase load factors and decrease local mileage by 10 percent. Nationwide, a similar effort could have reduced transportation fuel consumption by 0.9 percent in 1972.

The impact of Federal regulation of motor common carriers on energy consumption is unknown to a large extent. While many regulations clearly lead to unnecessary fuel consumption, little data have been gathered to indicate the magnitude of the problem. A study of Interstate Commerce Commission (ICC) regulation (7) indicates that the ICC has tended to emphasize its traditional responsibilities in the provision of high quality freight service. Energy considerations have largely been a secondary concern. Several regulations that cause unnecessary fuel consumption are identified: 1) the requirement that common carriers use gateway cities when they do not have authorization to provide direct service between two points; 2) the regulation that a common carrier cannot use a piggyback service if it would reduce the miles traveled by more than 20 percent of its authorized route; 3) the requirement that common carriers must have operating authority to serve a city if they want to transfer cargo to a

piggyback service in that city; and 4) the regulation that private carriers may not haul goods other than their own without the same authorization required for common carriers.

An example of the magnitude of possible savings is given in a study of 10 private trucking operations (44). Removal of the fourth restriction above would have enabled these operations to reduce their intercity mileage by 29 percent. A similar reduction nationwide in private carrier mileage would have reduced 1972 domestic TDTE by 0.3 percent.

The summation of the above savings indicates a potential 1.6 percent reduction in fuel consumption. These impacts are contingent on a large number of actions, both regulatory and private. The savings actually generated through load factor improvements will probably be significantly less.

3.6.3 Traffic Control Strategies

A number of traffic control actions have been proposed to reduce truck interference with traffic flow. These include restricting the hours that trucks may travel on certain streets or providing segregated truck access facilities to densely developed commercial areas. Except in certain special cases, significant congestion is caused primarily by automobiles, not trucks. While truck-related improvements are clearly useful, they do not have large potential for energy savings.

4. Other Considerations

This section discusses further implications of the various strategies identified above. These considerations include personal mobility, national economics, state financial problems, and vehicle safety and emission standards.

4.1 Mobility

Positive contributions to energy savings have been identified across a wide range of strategies. The most effective approach appears to be increased vehicle efficiency through technological improvements and a shift in the sales mix toward more efficient models. There are several available policies that can be used to realize these opportunities. Among these are legislated mandatory fleet efficiency levels, gasoline rationing and price increases, and efficiency based taxes and rebates on new cars.

Legislated fleet efficiency levels are clearly very attractive in terms of preserving mobility levels. Rebates on fuel-efficient new cars and light trucks alone with taxes on less efficient models would reinforce the legislation without significant impacts on mobility. Fuel price increases may have potentially detrimental impacts on mobility. However, the population as a whole has demonstrated a large degree of insensitivity to gasoline price. Additionally, the effects of fuel price increases can be offset to a large extent in the long run by the purchase of more efficient automobiles. These families whose incomes prevent a rapid response of this type may experience some mobility restriction.

Fuel rationing is an approach that appears to carry serious implications for mobility levels. Without sufficient time to respond to a proposed rationing

program, both auto makers and consumers would be adversely affected. Short term implications of a significant decrease in fuel availability would include a reduction in trip making, especially in areas without adequate transit service. A sudden decline in sales of less efficient new cars could result in serious losses to the auto industry, while additional impacts would be felt by recreational and service industries. An increase in the cost of nearly all goods would be expected.

4.2 The National Economy

The recessionary period experienced by the national economy in 1974-75 has been attributed, in large part, to the drop in new car sales in that period. Triggered by the fuel shortage early in 1974, the downturn in sales led to substantial overstocks in new car inventories and shut-downs of many auto assembly plants. Because the auto industry represents a significant portion of the Gross National Product (GNP) and total employment, impacts were felt in several areas, including primary manufacturing industries and the national labor market. Impacts on the national economy clearly merit attention in the evaluation of transportation energy conservation strategies.

Among the effective conservation strategies identified in Section 3 are the development of more fuel efficient automobiles, a shift in auto sales to the most efficient models available, increased ride sharing, and mode shifts to transit. The net effects of these strategies on the auto industry are significant. Investment in research and development as well as retooling of manufacturing and assembly plants are required. A measure of risk is involved in that technological innovations and redesigned automobiles may not find enthusiastic buyer acceptance. Potential impacts on the national economy are considered in detail in two sources.

In the first study (37), econometric models are used to evaluate alternative strategies that center on technological improvements to the automobile. These improvements are projected to hold petroleum consumption at the 1975 level given current growth rates in auto travel. If growth could be reduced to zero, the best of the technological improvements is estimated to reduce 1990 auto fuel consumption to approximately one half of present levels.

The various scenarios analyzed are presumed to succeed in the sense that no major problems arise. The most significant overall impact is found to be a slower rate of employment growth in the fuel-distribution and materials sectors. Total impact on employment is estimated as ± 0.3 percent of the work force in the year 2000. Total differential found in the capital market is less than one percent of the projected national capital investment level for that year.

A major caveat is included here, however. A large degree of uncertainty is associated with these forecasts. Clearly, the assumption that no major problems are encountered is an important one. Such a problem would include a cash shortage in the auto industry coincident with a business slump or severe buyer resistance to new technological innovations. The worst case is projected to be the bankruptcy of a major auto maker. Resulting national impacts would be felt among suppliers, dealers, and the labor market with possibly severe stock market repercussions.

The second study of national economic impacts (49) deals with the effects of the 1981-84 passenger car fuel economy standards, 22.0, 24.0, 26.0, and 27.0 mpg, respectively. Impacts in the labor market are again small. Small declines in auto sales and a shift in the supply market to lighter materials cause some

decline in employment. This is more than offset by increased labor required to retool manufacturing plants. A slight increase in employment is estimated to be the net result. Additionally, impacts on both the Consumer Price Index and the Gross National Product are estimated to be very small.

In summary, then, national economic impacts can be minimized provided no strong disruption occurs. The likelihood of such disruptions is tied to such hard-to-forecast variables as the business cycle and consumer tastes.

4.3 State Tax Revenues

Two studies of the impacts of fuel conservation measures considers a third indirect impact. In thirty-one of the fifty States, motor fuel taxes represent more than 10 percent of total tax revenues. Before the oil embargo, these revenues grew with total VMT at a rate of 5 to 6 percent yearly. Since the embargo, however, revenue growth has ranged from 2 to 3 percent. Simultaneously, construction costs have escalated through higher petroleum and labor costs. The combined impacts are felt in the inability of States to provide adequate maintenance of existing highways and related structures.

The first paper (41) projects that a zero percent growth rate in gasoline consumption by 1980 and a 10 percent decrease by 1985 would cost the States some 33 billion dollars in anticipated tax revenues. Additionally, any increases in the price of fuel will further reduce the amount of work that can be purchased with existing revenue. As a result, employment in the highway construction industry is estimated to be cut by more than 50 percent by 1985. Additional impacts would include the adverse impacts of poorly maintained roads and bridges on agricultural production, coal mining, and other vital industries. The second

study (6) also finds accelerating State budget deficits, but to a much lower degree. Where the first source uses as a base the pre-embargo VMT growth rate, this study uses the lower rate that has been observed since the embargo. Additionally, the decline in gasoline consumption is not projected to be as pronounced. Total tax revenue lost is estimated between 3 and 4 billion dollars, an order of magnitude lower than the previous figure.

The second estimate gives an indication of the likely impacts of any programs enacted to reduce gasoline consumption. The estimate obtained from the first study, though possibly somewhat high, illustrates the magnitude of the revenue problems caused by the lower VMT growth rate since 1973. Because increases in State gasoline tax rates are not expected to offer sufficient relief, a need to consider other solutions is apparent.

4.4 Safety and Air Pollution Standards

Several of the studies cited in Section 3.1.1 considered safety and air pollution standards in their analysis of potential technology improvements. The results indicate that very large energy savings are possible even with fairly strict emission standards. In general, fuel economy appears most sensitive to the oxides of nitrogen standard. Additionally, the development of lightweight diesel engines appears to depend significantly on the absence of any strict particulate standard. Safety requirements are felt most in the addition of weight to smaller cars. One source (37) points out that the most significant impact of these standards is an increase in the levels of investment and risk experienced by the automobile industry.

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THE EXPECTED IMPACT OF THE
NATIONAL ENERGY PLAN
ON THE
FEDERAL-AID HIGHWAY PROGRAM

A TECHNICAL REPORT

BY THE
FEDERAL HIGHWAY ADMINISTRATION
U.S. DEPARTMENT OF TRANSPORTATION

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INTRODUCTION

This issue paper assesses the likely impact through 1985 of the proposed and emerging National Energy Plan (NEP) on the Federal-aid highway program and offers options for responding to the impacts. In addition to the main issue of the NEP's overall impact on the highway program, four subissues are analyzed regarding the impact of the plan on:

- (1) gasoline consumption, State gasoline tax receipts, and Federal gas tax receipts;
- (2) the time when the proposed standby gas tax would be triggered;
- (3) estimates of State and Federal gasoline tax revenue shortfalls under the plan and alternative methods of compensating States for their shortfall; and
- (4) the probable impact of the plan on highway construction levels.

This issue paper is divided into five sections: Background, Present Status, Policy Assumptions, Analysis, and Alternative Courses of Action. The Background section summarizes the relevant elements of the NEP. The Present Status section summarizes: (a) State concerns about the impact of the NEP on their highway programs; (b) the results of five other relevant studies done to date by OST/Jack Faucett Associates, the National Governors' Association (NGA)/AASHTO/Illinois

DOT, the Congressional Budget Office (CBO), the General Accounting Office (GAO), and the Office of Technology Assessment (OTA); and (c) FHWA analyses done to date on the energy resource transportation issue.

The remaining three sections of the paper, Policy Assumptions, Analysis, and Alternative Courses of Action, are self-explanatory. These sections include the critical assumptions necessary to conduct an analysis of an issue of this type, as well as the substance of the analysis itself. The alternatives represent our early thoughts and do not reflect final DOT policy positions as yet.

A few caveats are in order. Because the NEP is now before Congress and undergoing apparent changes and because the issues raised here require time-consuming analysis, the Federal Highway Administration (FHWA) will make these issues the subject of further study and will update the findings of this paper as appropriate. In particular, we will concentrate on improving our analysis of three important problems uncovered in the course of preparing this report: (a) the impact on highway programs of alternative proposals for reducing gasoline consumption; (b) the impact of automobile gas-guzzler taxes and rebates for high-mileage autos on highway travel and fuel consumption; and (c) the effect of the NEP on retail gasoline prices.

Finally, it should be noted that this report describes the general status of the energy proposals as of mid-September and is thus subject to changes as the Congress proceeds in its deliberations.

BACKGROUND

The National Energy Plan, published by the White House on April 29, contains the complete discussion of the issues, strategies, proposed solutions, and general impacts of the plan as developed by the President. The "Howard Amendment," also supported by the Administration, would have added a 5-cent per gallon gasoline conservation tax to the existing 4-cent per gallon tax. Although this proposed tax was recently defeated in the House, it is probable that such a tax will be considered by the Senate and again by the Congress in future years. The National Energy Plan as discussed in the remainder of this issue paper, therefore, should be understood to encompass both proposals. To distinguish clearly between the two alternative plans, the discussion and analysis that follow consider two versions of the plan, NEP₁ is the President's plan, including a standby gasoline tax, and NEP₂ is the same but with the Howard Amendment's positive 5-cent per gallon gasoline tax replacing the standby gasoline tax. There are several key elements of these plans that would impact significantly upon the Federal-aid highway program.

A. Principles, Goals, and Strategies

Statements of policy by themselves have little statutory effect; however, they could well influence Americans' future travel habits and priorities. The aspects of these statements relevant to highway transportation include the need for:

- governmental responsibility and societal sacrifices;
- continued healthy economic growth;
- reduced demand for energy, especially foreign oil, to a growth rate of less than 2 percent per year;
- emphasis on conservation over production to reduce oil imports to less than 6 million barrels/day; to achieve a 10 percent reduction in gasoline consumption; and to price energy at the "true replacement cost";
- increased coal production to 1,265 million tons per year by 1985; and
- environmental protection through conservation of resources.

Taken together, these policies should indeed have a significant effect on the highway program. Directly, as people begin to develop a conservation ethic, we would expect a slowdown in the rate of travel growth in future years and a growing demand for more efficient highway travel. Indirectly, we would expect some influence upon decisions on highway improvements--the type, design, and location--although this influence (even its direction) is difficult at this point to predict.

B. Conservation

It is the conservation elements of the NEP that are most relevant to the highway program. It should be pointed out that recent congressional action to deny or weaken certain of the punitive taxes associated with gasoline use and automobile efficiency makes it doubtful that these elements of the plan will be enacted exactly as proposed.

The principles, however, that the punitive taxes help implement should be assessed for their impact, inasmuch as it is likely that some type of conservation program will emerge from the Congress.

The relevant conservation elements are:

- Gas-guzzler tax and rebate--a graduated excise tax on new automobiles and light-duty trucks that fail to meet fuel economy standards, and a graduated rebate for those that do meet standards.
- Gasoline conservation tax--a 5-cent per gallon tax in addition to the existing 4-cent per gallon tax.
- Auto efficiency standards--DOT to exercise its authority to raise mileage standards in any year.
- 55 m.p.h. speed limit--to be continued and vigorously enforced with highway fund sanctions.
- Standby gasoline tax--an incremental 5-cent per gallon gasoline tax on an annual basis if consumption targets are not met, up to a 10-year imposition of 50 cents in the worst case.
- Expanded use of Highway Trust Fund--recognizing the reductions in State gasoline tax revenues arising from conservation, the NEP commits the Administration to developing a program to compensate States and insure adequate highway maintenance.
- Removal of 10 percent excise tax on intercity buses--to encourage expansion in this form of transportation as more fuel-efficient than automobiles with few passengers.

- Efficiency standards for light-duty trucks--for trucks weighing up to 10,000 pounds.
- Federal Energy Management Program--autos purchased by the Federal Government shall exceed fuel efficiency standards; and a Federal vanpooling program for Federal employees will be initiated.

The NEP also emphasizes that these programs collectively may not achieve the 10 percent reduction goal. If supplementary voluntary efforts are not successful in meeting the target, then additional mandatory measures, such as a commuter tax, will be considered.

C. Oil Pricing

A principle with respect to oil pricing in the NEP is the reduction of domestic price controls and the equalization of domestic crude prices with global oil prices.

- Crude oil equalization tax (wellhead tax)--a three phase tax per barrel to equal the difference between controlled domestic price and the world price by 1980. Then the price would fluctuate with the world price provided the world price rises are consistent with the rate of domestic inflation. (This tax will undoubtedly be passed on to gasoline consumers in some form.)
- Gasoline price decontrol--the NEP expects the Administration to eliminate these controls and allocation regulations.

D. Coal Recovery

Along with oil, natural gas, nuclear power, and hydroelectric power, coal is recognized as a primary source of conventional energy and one that represents a near-term substitute of major proportions. Through the use of oil and natural gas users taxes, coal conversion regulatory policies, environmental trade-offs, and a research and development expansion, the NEP commits the Nation to a strong coal conversion policy that will greatly expand the mining, processing and transportation of coal.

A related element is an "Energy Transportation Study" that will reassess the Nation's energy transportation systems under a Presidential Commission. Of particular emphasis will be the issues of moving increased supplies of oil and gas from Alaska and the Outer Continental Shelf and the possibility of increases in western coal production. It is recognized that the emerging energy systems will have an impact upon highway transportation.

In summary, the NEP is a comprehensive plan for energy conservation and redistribution that contains several key elements impacting upon highway transportation. Even though certain aspects, especially the punitive taxes, are in jeopardy in the Congress, the overall impact of the President's targets for consumption and the demand for resource transportation remain key issues. This paper, therefore, analyzes these issues for their expected overall impact on the Federal-aid highway program.

PRESENT STATUSA. State Concerns

The primary concern of the States, as expressed in a letter to President Carter from the National Governors' Association (NGA), is that the NEP will seriously reduce State gasoline tax revenues by reducing gasoline consumption and by weakening the States' ability to increase their own gasoline tax rates. States note that rapid increases in highway construction costs during the early 1970's have reduced States' ability to match available Federal funds so that the backlog of deferred highway rehabilitation and maintenance continues to mount.

State highway programs, already financially pressed, cannot afford another reduction in motor fuel tax revenues. The end result may be a deteriorated highway system, less opportunity to address other transportation needs, plus adverse effects on employment and national economic vitality.

The NGA suggests that these problems can be alleviated somewhat by either permitting the States to preempt a certain percentage of the proposed energy taxes or by the Federal Government's returning such revenues to the States to replace the anticipated shortfall. The NGA cautions that such a replacement program should carefully avoid apportionment formulas that would open new divisions among the States. Rather, NGA recommends either adapting the present formulas for Federal-aid primary, secondary, and urban funds or basing returns on each State's share of total State gasoline tax revenues for a given recent year.

B. Summary of Other Analyses

The National Energy Plan, exclusive of the 5-cent per gallon gas tax proposed by the Howard Amendment, has been the subject of analyses by each of the following organizations: the General Accounting Office (GAO), the Office of Technology Assessment (OTA), the OST/Jack Faucett Associates, the Congressional Budget Office (CBO), and the Illinois DOT/AASHTO/National Governors' Association in a staff paper.

Although the GAO study does not contain quantitative estimates of the effect of the plan on gasoline consumption, it does state that it believes that the proposed standby gasoline tax may not be high enough to result in significant cutbacks in gasoline consumption. It also suggests that some of the revenue from increased gasoline taxes be used to improve the fuel efficiency of automobiles and to improve mass transit rather than be entirely rebated to consumers. The GAO also questions whether the plan's coal production goals may be achieved in view of a number of constraints, including the need for capital to upgrade and expand large portions of the Nation's railroads, particularly in the eastern States.

The OTA study finds that the plan's energy conservation measures for the transportation sector are focused too narrowly on the automobile. More attention should be given in the plan to curtailing truck fuel consumption, to curtailing the use of all petroleum derived fuels, not just gasoline, to promoting mass transit, and to making energy-saving changes in transportation regulations.

The OTA study questions whether the plan's goal of a 10 percent reduction in gasoline consumption by 1985 will be met. It states that automotive consumption can probably be reduced by 10 percent but increased gasoline consumption by trucks will probably offset the auto reduction enough to miss the goal.

The OTA study notes that the 1976 Energy Policy and Conservation Act (EPCA) fuel efficiency standards remain the major source of fuel conservation in the transportation sector, and it suggests that a better way to assure compliance with the standards may be to increase the statutory penalties for noncompliance rather than to use the proposed tax/rebate structure. The OTA notes that a predetermined additional tax on gasoline may be more effective at reducing gasoline consumption than the proposed standby tax.

In reference to coal production and transportation, the OTA study finds that coal production could fall short of the plan's 1985 target by up to 200 million tons per year, in part because of potential transportation bottlenecks, particularly in the East.

The OST/Jack Faucett study concludes that the President's goal of a 10-percent reduction in gasoline consumption by 1985, compared to 1977, will be achieved. However, this conclusion refers only to consumption by autos; trucks are excluded. The study concludes that a "significant incentive" is provided to reduce gasoline consumption and travel. Consumption will peak in 1979 at only 0.6 percent above the 1977 level, then will begin a continuous decline through

1985 (10.6 percent below 1977) and through 1990 (18 percent below). However, when the OST/Faucett projections of gasoline consumption by trucks are included, the figures change. As before, consumption will peak in 1979, but at 1.4 percent above the 1977 level. It will then fall to only 5.1 percent below in 1985 and to 10 percent below in 1990. Light trucks are expected to shift to diesels or more efficient gasoline engines, and heavy trucks are expected to have a higher percentage of diesel engines than today. The OST concludes that gasoline consumption by trucks will continue to grow at about 1.15 percent per year through 1990. Therefore, a reduction will be achieved, but not to the degree indicated by the OST/Faucett text.

In contrast to OST's projected decrease in gasoline consumption, CBO concludes that consumption will remain above the 1976 level under the NEP. The CBO expects gasoline consumption to peak in 1979 at 5.4 percent above the 1976 level. Consumption will then decline through 1985, to 0.7 percent above the 1976 level, and begin to increase again through 1990. The CBO's 1990 projection is 6.2 percent above 1976. The CBO concludes that the NEP will help conserve gasoline, but only relative to what would otherwise be consumed. The CBO projects the relative savings to be 5.1 percent in 1985, and 8.7 percent in 1990. The CBO uses 1976 as its base year instead of using 1977 as the NEP does, because 1977 consumption can only be estimated at this time.

The only effect CBO anticipates the plan to have upon the Federal budget is the need to compensate the States for lost revenue, which CBO projects to be \$3 billion through 1985 and \$8.16 billion through 1990. The CBO suggests that such compensation be returned to the States in the form of a block grant for transportation.

The NGA staff analysis does not address fuel consumption directly; rather, the analysis assumes the President's goals will be met and concerns itself with a revenue "shortfall." The analysis anticipates a cumulative shortfall of \$33.1 billion in State gasoline tax revenue under the NEP. However, the \$33.1 billion is based on unusual assumptions. A baseline projection is assumed with a continuous 5-percent annual increase in State gasoline tax revenues from 1973 through 1985. This baseline projection is compared to a sliding rate of change under the NEP, beginning with +3 percent in 1976 and falling to -4 percent in 1985. The \$33.1 billion shortfall, furthermore, is estimated for FY 1973 through 1985. Therefore, one-third of this period (FY 1974-77) is not affected by the NEP.

C. Energy Resource Transportation

As part of the NEP, the President has called for an increase in coal production to 1,265 million tons by 1985, which is about 600 million over the 1976 production level. The additional coal production is needed principally to substitute for oil and natural gas in electric powerplants. The FHWA and DOT are concerned about what additional transportation improvements and changes in Federal programs may be required to move future coal production most efficiently from mine to consumer.

These issues are the subject of a study ordered by Congress in Section 153 of the 1976 Federal-Aid Highway Act. In its work on the Section 153 study, FHWA found that highway transportation figures importantly in the transportation of coal mined in many States east of the Mississippi, in the hauling of uranium ore in some of the Rocky Mountain States, and in accommodating more general travel needs generated by new energy activities in many States. Of these three problems, the hauling of coal over highways in eastern States, particularly in Appalachia, is the most severe.

In 1974, the latest year for which data are available, coal trucks traveling on public highways accounted for only about 3.5 percent of total ton-miles of coal transportation by all modes, but in that same year, an estimated three-fourths of the total coal production moved some distance over public highways. In many cases, coal trucks are operating on local and secondary roads that are structurally and geometrically unfit for travel by such heavy loads. Despite the relatively high cost of moving coal by truck, the coal ton-miles hauled by truck and the road mileage over which they travel is expected to grow even though coal truck travel will probably decline as a percentage of total coal ton-miles. The reason for expected growth in coal truck travel is that coal production will grow in places not easily served by other modes: small scattered mines located in difficult terrain some distance from existing rail lines or waterways and not suitable for new rail lines or slurry pipelines.

At present the burden for making needed highway improvements and paying costs associated with coal truck travel to meet national energy needs is borne almost entirely by the residents of coal producing States. Present apportionment formulas for Federal highway aid do not recognize that many States have large special needs attributable to coal or, in some case, other energy-related activities. Furthermore, much of the mileage needing improvement is not on a Federal-aid highway system and, thus, is not eligible for most categories of Federal highway programs to help alleviate problems caused by increased coal production.

POLICY ASSUMPTIONS

The analysis that follows this section measures the impact of the NEP by comparing conditions under two versions of the plan, referred to here as the "NEP₁ case" and the "NEP₂ case," with what would happen if the plan were not enacted, the "base case."

Under the NEP₁ case, the President's plan, including a standby gasoline tax, is assumed to be enacted substantially as proposed. The NEP₂ case assumes enactment of the President's plan but with the Howard Amendment's 5-cent per gallon gasoline tax replacing the standby gasoline tax. The base case assumes that no elements of the plan would be enacted but that fleet fuel economy standards under the 1976 Energy Policy and Conservation Act (EPCA) would exist and be complied with.

To avoid the analytical complexities of the gas-guzzler taxes and rebates as well as to reflect the likely course of events with or without the NEP, this analysis makes the same assumptions about fleet fuel economy for both the base and NEP cases. That assumption is that the EPCA standards existing and anticipated for cars and light trucks will be complied with and that there will also be some improvement in the fuel economy of heavy trucks. (The detailed assumptions are listed in the Analysis section and in Appendixes A and B.) The effect of this assumption is that the analysis does not make explicit the impact of the NEP's gas-guzzler tax on gasoline consumption. However, the impact of the tax is reflected in the totals for gas

consumption after the enactment of the NEP because the gas-guzzler tax and rebate provisions are designed to force compliance with EPCA fuel efficiency standards.

Despite their awkwardness, there is justification for our fleet fuel-economy assumptions. It seems likely that Congress will enact whatever penalties may be required to assure the attainment of congressionally mandated fuel economy standards under EPCA whether or not the President submits his own plan.

Two other major policy assumptions underlie this analysis. First, uncertainties about the future travel growth and varying concepts of States' responsibility to offset the revenue effects of falling gas consumption make it difficult to settle on one best answer to the questions that concern this paper. Thus, scenarios and options have been developed that are designed to bracket the range of reasonable estimates of future fuel consumption, gas tax receipts, State revenue shortfalls, and the time when the standby gas tax would be triggered.

Second, the analysis is limited at this time to shortfalls in gasoline tax revenues even though the NEP may also affect other highway revenue sources. Gasoline tax revenues are singled out because they are the focus of the NEP and because they constitute the predominant source of State and Federal highway revenues. Also, it is not clear what, if any, impact the NEP will have on some of the other highway revenue sources.

In addition to the major policy assumptions mentioned above, many other important assumptions had to be made for a large number of parameters, such as the expected rate of inflation, the price elasticity of demand for gasoline, the change in retail gasoline price attributable to the crude oil equalization tax, and the baseline rate of growth in State gasoline tax rates. These and other assumptions are specified in the following section.

ANALYSISA. Base Case Estimates of Highway Travel, Gasoline Consumption and State Fuel Tax Revenue

The base estimates of growth in travel, gasoline consumption and State gasoline tax revenues were made without consideration of any inhibiting influences other than those provided in existing laws, i.e., the mandatory fuel efficiency standards.

The travel projections were the basis for the projection of all other items. Two projections of total highway travel were made.

Scenario A--high forecast--vehicle miles of travel (VMT) totals were projected at the average annual growth rate experienced in the period 1965-1975, which was 4.1 percent.

Scenario B--low forecast--VMT growth was projected at 2.6 percent, which was the growth rate in the "1972 National Highway Needs Report" and other recent national studies.

The total VMT forecasts were broken down into truck and passenger vehicle components. The truck component was further reduced to the amount of travel estimated to be performed by gasoline-powered vehicles. The passenger vehicle travel was assumed to be all gasoline. Estimates of gasoline used were derived separately for trucks and passenger cars. The estimated total highway gasoline consumption was then used to develop estimates of total gasoline consumption and State fuel tax revenues.

The methodology and assumptions used in the estimating process are described in detail in Appendix A, along with the estimates developed.

B. Effect of Petroleum Tax Components of NEP on Gasoline Consumption

1. Crude Oil Equalization Tax (COET)

The proposed crude oil equalization tax would raise average crude oil prices (in 1977 dollars) by approximately 8 percent in 1978, 1979, and 1980. This crude oil price increase would result in an annual gasoline price (1977 dollars) increase of about 4 percent in 1978, 1979, and 1980. The resulting changes in annual gasoline consumption were calculated to be -0.8 percent in 1978, -1.84 percent in 1979, -3.0 percent in 1980, -3.36 percent in 1981, and -3.48 percent in 1982. By 1980 when the COET is fully implemented, gasoline prices would be increased by 7.9 cents per gallon in 1977 dollars (from 63.7 cents per gallon to 71.6 cents per gallon.) The assumptions and methodology used in making these estimates are described in Appendix B. Table 1 shows gasoline consumption with and without the COET under the two base case scenarios.

2. Standby Gasoline Tax

A comparison of gasoline consumption levels in Table 1 with the gasoline consumption targets set forth in the President's NEP shows that the standby gasoline tax would not be triggered under Scenario B. Under Scenario A, the standby tax would first be triggered in 1984 since gasoline consumption in 1983 exceeds the 1983 target by 2.5 percent. The 1984 tax would raise real gasoline prices (1977 dollars) by about 7 percent. Using the procedure described in Appendix B, the 1984 tax would reduce 1984 gasoline consumption by an additional 1.4 percent, or to a level of 108,815 million gallons.

Table 1
Effect of Crude Oil Equalization Tax

Year	Total Gasoline Consumption (millions of gallons)				NEP Target
	Scenario A		Scenario B		
	Without COET	With COET	Without COET	With COET	
1977	110,569	110,569	108,975	108,975	
1978	111,975	111,079	108,770	107,900	112,675
1979	112,904	110,827	108,093	106,104	113,442
1980	113,513	110,108	107,109	103,896	114,208
1981	113,661	109,842	105,705	102,153	113,442
1982	113,573	109,607	104,100	100,477	110,376
1983	113,973	110,007	102,963	99,380	107,310
1984	114,339	110,360	101,804	98,261	104,244
1985	114,694	110,703	100,649	97,146	101,178

Since this level of consumption exceeds the target by more than 1 percent, the standby tax would again be triggered in 1985. The 1985 tax would raise real gasoline prices by an additional 6.5 percent. The 1985 effect of this price increase, together with the second year effect of the 1984 price increase, would reduce 1985 gasoline consumption by 3.1 percent, or to a level of 107,271 million gallons.

3. The Howard Proposal

If the standby gasoline tax were replaced by the Howard proposal for a one-time tax increase of 5 cents in 1979, annual gasoline consumption would be reduced by 1.5 percent in 1979, 1.9 percent in 1980, and 2.1 percent in 1981. Consumption would still exceed the NEP target in Scenario A by less than 1 percent in 1983, 3.6 percent in 1984, and 7.1 percent in 1985.

C. Effects of Reduction in Gasoline Consumption on State Gasoline Tax Revenues

Table 2 shows expected State gasoline tax revenues for the years 1977-1985 under four different cases for both Scenario A and B. The four cases analyzed are revenues without EPCA standards ^{1/} and without the NEP; revenues with EPCA standards but without the NEP (the base case); revenues under NEP₁ (this case assumes EPCA standards are met); and revenues under NEP₂ (this case also assumes EPCA standards are met).

^{1/} Revenues without EPCA fuel efficiency standards are computed by assuming that auto efficiency consumption per vehicle-mile of travel would remain at its 1976 level for the years 1977-1985. This assumption is one reasonable estimate of what might have happened in the absence of EPCA fuel efficiency standards.

Table 2
State Gasoline Tax Revenues ^{1/}
(Millions of Dollars)

Year	Scenario A			Scenario B				
	Without EPCA or NEP	With EPCA but without NEP (base case)	With EPCA and NEP ₁	With EPCA and NEP ₂	Without EPCA or NEP	With EPCA but without NEP (base case)	With EPCA and NEP ₁	With EPCA and NEP ₂
1977	8,408.0	8,183.2	8,183.2	8,183.2	8,286.3	8,065.2	(7)	(8)
1978	8,735.3	8,287.2	8,220.9	8,220.9	8,485.4	8,050.0	7,985.6	7,985.6
1979	9,077.1	8,356.0	8,202.3	8,079.3	8,690.3	8,000.0	7,852.8	7,735.0
1980	9,432.7	8,401.0	8,149.0	7,994.2	8,900.6	7,927.1	7,689.3	7,543.2
1981	9,803.3	8,412.0	8,129.4	7,958.7	9,117.1	7,823.2	7,560.3	7,401.5
1982	10,188.6	8,405.5	8,113.0	7,942.6	9,338.8	7,704.4	7,436.3	7,280.1
1983	10,589.1	8,435.1	8,141.6	7,970.6	9,566.1	7,620.2	7,355.0	7,200.6
1984	10,944.3	8,462.2	8,053.4	7,996.2	9,799.1	7,534.5	7,272.3	7,119.6
1985	11,438.8	8,488.4	7,939.0	8,021.0	10,038.1	7,449.0	7,189.8	7,038.8
Total	88,617.2	75,430.6	73,131.8	72,366.7	82,221.8	70,173.6	68,406.6	67,369.6

^{1/} Assumes no change in present State gasoline tax rates.

NOTE: NEP₁ is the President's plan, including a standby gasoline tax, and NEP₂ is the same but with the Howard Amendment's positive 5-cent per gallon tax replacing the standby gasoline tax.

Table 3 shows changes in State gas tax revenues attributable to the EPCA standards, to NEP₁, to NEP₂, and to EPCA plus either NEP₁ or NEP₂. Revenues attributable to each of these measures or combination of measures are calculated by subtracting appropriate columns of Table 2.

From Table 3, the cumulative shortfall in State gasoline revenues from the NEP amounts to \$2.3 to \$3.1 billion in Scenario A and \$1.8 to \$2.8 billion in Scenario B. The shortfall due to the NEP would, however, be in addition to the much larger \$12.0 to \$13.2 billion reduction from the historical trend attributable to EPCA standards.

If, however, State gasoline tax rates were increased at the same annual rate as over the 1970-1975 period, then the revenue shortfall would be reduced by about \$6 to \$7 billion--more than enough to offset the shortfall due to the NEP but not enough to offset shortfalls due to both the NEP and EPCA standards. In fact, in order for States to fully offset the effect of the EPCA standards, State gasoline tax rates would have to be increased at about twice the rate of annual increase that took place during the 1970-1975 period.

D. Compensating States for Revenue Shortfall, 1977-1985

There is no unequivocal estimate of the need for Federal compensation. If it is the Federal responsibility to compensate States for the entire revenue shortfall attributable to the NEP, then the amount of compensation would total \$1.8 to \$3.1 billion for the years 1977-1985. If, in addition, Federal compensation is required for shortfalls attributable to EPCA standards, the amount owed the States would total about \$13.8 to \$16.3 billion for the period 1977-1985.

Table 3
Changes in State Gasoline Tax Revenues
(Millions of Dollars)

Year	Scenario A			Scenario B						
	Due to EPCA (1) $\frac{1}{2}$ - (2)	Due to NEP1 (2) - (3)	Due to NEP2 (2) - (4)	Due to EPCA and NEP1 (1) - (3)	Due to EPCA and NEP2 (1) - (4)	Due to EPCA (5) - (6)	Due to NEP1 (6) - (7)	Due to NEP2 (6) - (8)	Due to EPCA and NEP1 (5) - (7)	Due to EPCA and NEP2 (5) - (8)
1977	- 224.8	--	--	- 224.8	- 224.8	- 221.1	--	--	- 221.1	- 221.1
1978	- 448.1	- 66.3	- 66.3	- 514.4	- 514.4	- 435.4	-	- 64.4	- 499.8	- 499.8
1979	- 721.1	- 153.7	- 276.7	- 874.8	- 937.8	- 690.3	- 147.2	- 265.0	- 837.5	- 955.3
1980	- 1,031.7	- 252.0	- 406.8	- 1,283.7	- 1,358.5	- 973.5	- 237.8	- 383.9	- 1,211.3	- 1,351.4
1981	- 1,391.3	- 282.6	- 453.3	- 1,673.9	- 1,844.6	- 1,293.9	- 262.9	- 421.7	- 1,556.8	- 1,715.6
1982	- 1,783.1	- 292.5	- 462.9	- 2,075.6	- 2,246.0	- 1,634.4	- 268.1	- 424.3	- 1,902.5	- 2,058.7
1983	- 2,154.0	- 293.5	- 464.5	- 2,447.5	- 2,618.5	- 1,945.9	- 263.2	- 419.6	- 2,365.5	- 2,568.5
1984	- 2,482.1	- 408.8	- 466.0	- 2,890.9	- 2,948.1	- 2,264.6	- 262.2	- 414.9	- 2,711.1	- 2,878.5
1985	- 2,950.4	- 549.4	- 467.4	- 3,499.8	- 3,417.8	- 2,589.1	- 259.2	- 410.2	- 2,848.3	- 2,999.3
Total	- 13,186.6	- 2,298.8	- 3,063.9	- 15,485.4	- 16,250.5	- 12,048.2	- 1,767.0	- 2,804.0	- 13,815.2	- 14,852.2

1/ Numbers in parentheses refer to columns of Table 2.

States, however, may reasonably be asked to share the financial burdens of energy conservation and so reduce the amount of Federal compensation owed. For example, if States were to maintain the same level of gasoline taxes per vehicle-mile of travel as were levied in 1976, States would collect in total about \$12.0 to \$13.2 billion more for the years 1977-1985 than if their gas tax rates remain at their present rates. This increase would much more than make up for the shortfall due to the NEP, but it would not be quite enough to offset the shortfall due to the NEP and the EPCA standards.

Alternatively, one can argue that it is the States' responsibility to raise gasoline tax rates at the same rate as in the recent past. If States increase taxes at the same rate as for the 1970-1975 period, they would collect an additional \$6 to \$7 billion. This amount would more than offset the shortfall attributable to the NEP but would leave about \$8.6 to \$9.6 billion of the shortfall attributable to the NEP plus the EPCA standards unmet.

E. Effect of Reduction in Gasoline Consumption on Federal Gasoline Tax Revenues

Table 4 shows Federal gas tax revenues potentially available for financing Federal-aid highway programs under four different circumstances for both Scenario A and B. The four circumstances analyzed are revenues without EPCA or the NEP, revenues with EPCA but without the NEP which is our "base case," revenues with NEP₁, and revenues with NEP₂.

Table 4
Federal Gasoline Tax Revenues Potentially Available for Financing Federal-Aid Highway Programs
(Millions of Dollars)

Year	Scenario A			Scenario B				
	Without EPCA or NEP	With EPCA but without NEP (base case)	With EPCA and NEP ₁	With EPCA and NEP ₂	Without EPCA or NEP	With EPCA but without NEP (base case)	With EPCA and NEP ₁	With EPCA and NEP ₂
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1977	4,390.6	4,273.2	4,273.2	4,273.2	4,327.3	4,211.6	4,211.6	4,211.6
1978	4,561.5	4,327.5	4,292.9	4,292.9	4,431.0	4,203.7	4,170.0	4,170.0
1979	4,740.0	4,363.4	4,283.2	6,855.8	4,538.0	4,177.5	4,100.7	6,563.6
1980	4,925.7	4,387.0	4,255.4	6,783.6	4,647.8	4,139.5	4,015.3	6,400.9
1981	5,119.2	4,392.7	4,245.1	6,753.5	4,760.9	4,085.2	3,947.9	6,280.6
1982	5,320.4	4,389.3	4,236.6	6,739.8	4,876.7	4,023.2	3,883.2	6,177.6
1983	5,529.6	4,404.8	4,251.5	6,763.6	4,995.4	3,979.2	3,840.7	6,110.2
1984	5,715.0	4,418.9	4,205.4	6,785.3	5,117.0	3,934.4	3,797.5	6,041.4
1985	5,964.3	4,432.6	4,145.7	6,806.3	5,241.8	3,889.8	3,754.5	5,972.9
Total	46,266.3	39,389.4	38,189.0	56,054.0	42,935.9	36,644.1	35,721.4	51,928.8

Columns (1), (2), (3), (5), (6), and (7) include revenue from 4 cent Federal gasoline tax only.

Columns (4) and (8) include revenue from 4-cent gasoline tax plus half the revenue generated by the proposed 5-cent tax.

Table 5 shows changes in Federal gas tax revenues potentially available for financing Federal-aid highway programs attributable to EPCA, to NEP_1 , to NEP_2 , and to EPCA plus either NEP_1 or NEP_2 . Revenues attributable to these various measures are found by subtracting appropriate columns in the previous table.

From Table 5 it can be seen that the cumulative 9-year impact of NEP_1 and NEP_2 on Federal revenues available for highway improvements are $-\$0.9$ to $-\$1.2$ billion and $+\$15.3$ to $\$16.7$ billion, respectively. Adding the impact of EPCA to both NEP_1 and NEP_2 gives a total 9-year impact of $-\$7.2$ to $-\$8.1$ billion and $+\$9.0$ to $\$9.8$ billion, respectively.

The inflation of the early 1970's hit highway construction costs particularly hard and has spurred a persistent perception that available highway funds are insufficient. ^{1/} Although the NEP should not greatly increase the cost of highway construction, NEP_1 would aggravate the problems of recent inflation in highway construction costs and the shortfall in Federal gasoline tax revenues attributable to the EPCA standards.

On the other hand, under NEP_2 the additional revenues available for highway improvements from the Howard proposal would more than offset other Federal gas tax revenue shortfalls attributable to both the EPCA fuel efficiency standards and the damping effect on gasoline consumption of proposed new taxes on gasoline.

^{1/} For a detailed discussion of the problem, see "The Highway Capital Problem" (FHWA, Office of Program and Policy Planning, August 1975).

Table 5
Change in Gasoline Taxes Potentially Available for Funding Federal-Aid Highway Programs
(Millions of Dollars)

Year	Scenario A					Scenario B				
	Due to EPCA (1) 1/ - (2)	Due to NEF ₁ (2) - (3)	Due to NEF ₂ (2) - (4)	Due to EPCA and NEF ₁ (1) - (3)	Due to EPCA and NEF ₂ (1) - (4)	Due to EPCA (5) - (6)	Due to NEF ₁ (6) - (7)	Due to NEF ₂ (6) - (8)	Due to EPCA and NEF ₁ (5) - (7)	Due to EPCA and NEF ₂ (5) - (8)
1977	\$- 117.4	\$ --	\$ --	\$- 117.4	\$- 117.4	\$- 115.7	\$ --	\$ --	\$- 115.7	\$- 115.7
1978	- 234.0	- 34.6	- 34.6	- 268.6	- 268.6	- 227.3	- 33.7	- 33.7	- 261.0	- 261.0
1979	- 376.6	- 80.2	- 80.2	- 456.8	- 456.8	- 360.5	- 76.8	+ 2,386.1	- 437.3	- 2,025.6
1980	- 538.7	- 131.6	- 131.6	- 670.3	+1,115.8	- 508.3	-124.2	+ 2,261.4	- 632.5	+1,753.1
1981	- 726.5	- 147.6	- 147.6	- 874.1	+1,634.3	- 675.7	-137.3	+ 2,195.4	- 813.0	+1,519.7
1982	- 931.1	- 152.7	- 152.7	-1,083.8	+1,419.4	- 853.5	-140.0	+ 2,154.4	- 993.5	+1,300.9
1983	-1,124.8	- 153.3	- 153.3	-1,278.1	+1,234.0	-1,016.2	-138.5	+ 2,131.0	-1,154.7	+1,114.8
1984	-1,296.1	- 213.5	- 213.5	-1,509.6	+1,070.3	-1,182.6	-136.9	+ 2,107.0	-1,319.5	+ 924.4
1985	-1,531.7	- 286.9	- 286.9	-1,818.6	+ 842.0	-1,352.0	-135.3	+ 2,083.1	-1,487.3	+ 731.1
Total	\$-6,876.9	\$-1,200.4	\$-1,200.4	\$-8,077.3	\$+9,787.7	\$-6,291.8	\$-922.7	\$+15,284.7	\$-7,214.5	\$+8,992.9

1/ Numbers in parentheses refer to columns of Table 4.

F. General Assessment of Probable Impact on Highway Construction Levels

The impact of the proposed National Energy Plan on the overall level of highway construction stems from its impact on gasoline tax revenues plus its impact on highway construction costs. The impact on gasoline tax revenues has been set forth in the analysis above. It was found that the reduction in total State and Federal gasoline tax revenues attributable to NEP is in the range of \$2.7 to \$3.5 billion in current dollars for the period 1977 through 1985.

Unless countervailing actions are taken, the revenue reduction may reduce highway capital expenditures by Federal, State, and local governments for the period 1978 through 1985 by about \$1.3 to \$1.7 billion in current dollars or by about 0.9 percent to 1.2 percent. ^{1/} The exact amount of reduction is difficult to predict since it would depend, among other things, on the extent of State borrowings and the rate of obligation of available Federal-aid funds.

^{1/} These estimates assume (a) that revenue reductions give rise to equal reductions in spending; (b) that the spending reductions are allocated between capital expenditures and other highway spending categories according to the ratio of their projected totals for the years 1978 through 1985; and (c) that spending for highway capital improvements and other highway purposes will grow in current dollars at the same average rate as in the past 7 years.

The NEP₂ would likewise decrease the amount of State gasoline tax revenues by some \$2.8 to \$3.1 billion for the period 1977-1985, but the reduction in State revenues would be more than offset by the additional revenues available to the Federal Government from half of the proposed 5-cent increase in the Federal gasoline tax. The net increase over our base case in combined State and Federal gasoline taxes available under NEP₂ is estimated at about \$15.3 to \$16.7 billion for the period 1977-1985. These amounts do not include additional Federal funds that may be available as a result of the corresponding 5-cent increase in diesel fuel taxes under Congressman Howard's proposal.

It should be noted, however, that despite the net increase in available State and Federal gasoline tax revenues over our base case shown for NEP₂, the total State and Federal shortfall in gasoline tax revenues attributable to both EPCA and NEP₂ still amounts to some \$5.9 to \$6.5 billion.

The other potential source of reduction in the overall highway program attributable to the Plan is construction cost increases. Our analysis indicates that emerging energy policy is likely to have a rather significant direct impact on highway construction costs. A rise in the cost of asphaltic cement, coupled with a trend toward relatively greater amounts of reconstruction, restoration, and rehabilitation work using large amounts of this material, would significantly increase the cost of highway improvements. Moreover, an increase in the cost of off-site fuels used in support of construction activity would add to this problem. For example, the FHWA has

estimated that a doubling of petroleum product prices would result in an increase in the costs of highway construction by at least 20 percent.

It is also possible that the Plan could have an indirect inflationary impact on the cost of highway construction if energy policy stimulates a new round of inflation throughout the economy. According to the President's Council of Economic Advisors, however, substantial increases in overall inflation are not expected. The Council calculates the maximum expected inflationary impact of the Plan to be a 0.7-percent addition to the yearly rate of inflation that would otherwise occur.

ALTERNATIVE COURSES OF ACTION

This section sets forth a number of possible options responding to the highway-related issues raised by the National Energy Plan. These options cover a wide range--from a limited response to the issues raised to a comprehensive response.

The ideas presented below are options, not recommendations. A recommended course of action should not be determined until the dimensions of the final NEP emerge from Congress and until more thought is given to how the final Plan will affect the Department's proposals for restructuring the major federally aided transportation programs.

A. Do-Nothing Option

The Analysis Section of this report is, in effect, an assessment of what would happen to the highway program if the do-nothing option were pursued. As was shown, there would be relatively small, but significant, shortfalls in State and Federal revenues due to the NEP₁ and much larger shortfalls attributable to the implementation of the EPCA fuel efficiency standards. Thus, the combination of the NEP₁ plus compliance with EPCA fuel efficiency standards would result in significant reductions in the amount of highway funds available to respond to other highway-related issues raised by the Plan--especially the need for additional highway improvements to haul coal and to improve the fuel efficiency of highway travel.

NEP₂ would, however, substantially increase Federal revenues, while State revenues would suffer about the same shortfall as under NEP₁. Even under NEP₂, however, the new Federal revenues generated would not be enough to offset other State and Federal revenue shortfalls due to the combined effect of the EPCA fuel economy standards and NEP₂.

B. Options to Compensate States for Expected Revenue Shortfall

1. Tax Turnback to Alleviate Shortfall

Because the energy program is in the national interest and not just the Federal interest, an assistance program could be developed to make both Federal and State governments share the burden of the States' revenue shortfall. Listed below are several possible mechanisms that could be used to apportion to the States the Federal share of the burden:

- Apportion funds to the States according to each State's relative share of the Federal-aid apportionments for the primary, secondary, and urban systems.
- Apportion funds to the States based on highway use of gasoline taxed by the States.
- Apportion funds to the States on a per capita basis.
- Apportion funds to the States based on each State's effort to make up for the shortfall through its own tax structure (e.g., if a State increases its gasoline tax by 1 cent, then the Federal Government would match the proceeds of the additional 1 cent of State tax).

The most logical source of funds to finance the Federal share of the burden of the NEP₁ is the crude oil equalization tax because it is certain (and not contingent as is the standby tax) and it is the largest source of revenues. An amount equivalent to 1 cent for each gallon of motor fuel consumed for highway use could be assigned from the COET to a special trust fund similar to that used for general revenue sharing. The gas-guzzler tax is a possible source too, but it is not expected to yield sufficient revenues by itself to give adequate relief to the States. Under the NEP₂, the 5-cent per gallon gasoline conservation tax is also a logical and substantial source of funds that could be tapped to share the burden of the States' revenue shortfall.

2. Federal Assistance for Highway Maintenance

One alternative that might help compensate the States for the reduction in anticipated revenue due to energy conservation is for Federal involvement, through funding assistance, in the problems of maintenance of the Nation's highway systems. In fact, this option was considered prior to April 20 by the President, and although it is unclear as to the precise nature of the commitment, the President did, in his address to Congress, mention the possibility of compensating the States, and ". . . to insure adequate highway maintenance . . . through sources such as the Highway Trust Fund" The NEP of April 29, however, omitted the reference to maintenance as an Administration goal, committing us instead to a program to compensate the States for the reduced revenues.

Federal aid for maintenance is not a new issue. Certainly the AASHTO position has been considered for over 20 years in opposition to Federal involvement, citing potential problems of excessive administrative requirements, lack of standards, and points of Federal/State roles and responsibilities. On the other hand, the National Governors' Association has recently taken the position that highway maintenance needs are expanding so rapidly as to threaten the quality of the highway system, inasmuch as State and local funds cannot keep pace with needs. Furthermore, the problem is exacerbated by the fact the the Governors are reluctant to invest Federal aid in capital projects that require decades of maintenance expenditures at a time when legislatures are reluctant to increase State budgets for these needs. Thus a dilemma has been created which in many ways, is a Federal responsibility to help resolve.

- On balance, Federal involvement in the traditional areas of highway maintenance would be undesirable, primarily because the type of work required is primarily of State and local interest.
- The redefinition of eligibility of Federal funds in the 1976 Highway Act provides for "3R projects" (resurfacing, restoring, and rehabilitation), which include additional pavement layers and similar work to return the existing structure to a suitable

condition. Except for work such as protection, minor resurfacing (less than 3/4 of an inch, or short length, or patching), and the like, this provides for the major maintenance needs.

- If the traditional maintenance work were to be made eligible, the following principles should apply.

1. Maintenance should be defined as "physical repair" and should omit traffic services (snow removal and sanding, traffic control and service facilities, and toll operations) and other similar needs;
2. Title 23, NEPA, and other Federal laws should be modified in order to minimize the administrative burdens on minor projects;
3. A programming requirement (e.g., Section 105) should be retained in order to provide for accounting; and
4. A limitation, perhaps 10 percent per Federal-aid system, should be set on each State's obligations for maintenance.

In summary, traditional maintenance projects should probably remain ineligible for Federal funds. Other alternatives provide more important and acceptable approaches to the State revenue problem and should be more seriously considered.

C. Options for Addressing Broad, Energy-Related Transportation Issues

1. Alterations to Present Federal-Aid Highway Program Revenue-

Raising and Fund Delivery Mechanisms

A number of options exist which may be used singly or in combination to help alleviate the States' revenue shortfall and to address other energy-related highway problems, such as the need for highway improvements to haul coal or to promote energy efficiency. Many of these were expressed by the Secretary of Transportation in the "Options Paper for Highway and Transit Legislation" that was distributed in September.

2. Increased Gasoline Tax

The Federal gasoline tax of 4 cents a gallon has been in effect since 1959, and consideration is being given to raising it to meet the increased needs for highway funds due to inflation, new programs and other new requirements. Even though the Howard Amendment to increase the Federal gasoline tax by 5 cents per gallon was defeated in the House, it remains an attractive and viable option for simultaneously raising needed revenues and discouraging gasoline consumption.

Each 1-cent addition to the gasoline tax is estimated to produce added revenues of \$1 billion a year as a low estimate and \$1.2 billion based on the high travel forecast. Thus, a 5-cent gasoline tax would produce \$5 to \$6 billion a year of additional revenues. Some or all of these additional revenues could be earmarked for highway purposes as was proposed by the Howard Amendment. If the gasoline tax is increased, the diesel fuel tax should be increased by at least the same amount to preserve the equitable distribution of the tax burden among the various classes of highway users.

The revenues from a gasoline tax increase could be used to improve roads needed for hauling coal and for energy-efficient transportation improvements, such as mass transit, rehabilitation and electrification of existing railroads, special lanes for high-occupancy vehicles, and rehabilitation of existing roads and bridges for those who must use the automobile for work and other necessary trips.

FINDINGS AND CONCLUSION

This issue paper has estimated the range of impacts of the National Energy Plan. The crude oil equalization tax would increase the real cost of gasoline by 4 percent per year in 1978, 1979, and 1980, resulting in reduced consumption levels of 0.8 percent in 1978 to 3.48 percent in 1982. The standby tax would be triggered in 1983 in Scenario A (high-travel growth), putting the tax into effect in 1984. This would increase real gasoline costs by 7.0 percent in 1984 and by 6.5 percent in 1985. Gasoline consumption would then be reduced in 1984 and 1985 by an additional 1.4 percent and 3.1 percent, respectively. The standby tax would not be triggered under Scenario B (lower-travel growth) at least through 1985. The EPCA will offer the greatest reduction in consumption when compared to a baseline projection--a total of 15 percent for the 9-year analysis period.

The reduced consumption levels could cause State gasoline tax revenue shortfalls. The upper ranges of State revenue shortfalls for the 9-year period would be \$1.8 to \$2.8 billion under NEP₁ and \$2.3 to \$3.1 billion under NEP₂. These shortfalls would be in addition to the \$12.0 to \$13.2 billion shortfall attributable to EPCA. However, if increases in State gasoline tax rates keep pace with the rate increases of 1970 through 1975, the State shortfall could be reduced by \$6 to \$7 billion. Therefore, if it is determined to be a Federal responsibility to compensate States for shortfalls, the level of compensation could range from \$1.8 to \$16.3 billion. The exact amount would depend upon definitions and upon interim State tax policies.

Under the NEP_1 , Federal gasoline tax revenues potentially available for financing Federal-aid highway programs would experience a shortfall for the 9-year period of about \$0.9 to \$1.2 billion, whereas, under NEP_2 , they would enjoy a surplus of about \$15.3 to \$16.7 billion. To these sums can be added a Federal revenue shortfall of about \$6.3 to \$6.9 billion due to EPCA. Thus, the net change in Federal revenues attributable to both EPCA and the NEP for the 9-year period is a \$7.2 to \$8.1 billion shortfall in the case of NEP_1 and a \$9.0 to \$9.8 billion surplus in the case of NEP_2 .

The analysis of the expected impact of the National Energy Plan on the Federal-aid highway program and the consideration of options for responding to those impacts presented in this report are for the most part necessarily preliminary and inconclusive. As Congress and the Administration settle on a final version of the National Energy Plan and as we continue to improve our understanding of the complex interactions of the Plan with highway programs, we will be able to recommend other actions that will improve the Federal-aid highway programs' contribution to the goals of the National Energy Plan.

APPENDIX A

FORECASTING BASE CASE HIGHWAY TRAVEL, GASOLINE CONSUMPTION,
AND STATE FUEL TAX REVENUES1. Projection of Vehicle Miles of Travel (VMT)

Two projections of total highway VMT were made for the years 1977 to 1985.

Scenario A--high forecast--VMT totals were projected at the average annual rate of growth experienced in the period 1965-1974 (4.1 percent).

Scenario B--low forecast--VMT growth was projected at 2.6 percent per year, which was the growth rate projected in The 1972 National Highway Needs Report and other recent national studies.

The base year used for the projections was 1976. The VMT estimates for 1976 ranged from 1,390 billion, from "Traffic Volume Trends" (FHWA, Highway Statistics Division), to 1,412 billion, which is the sum of preliminary estimates by the State highway departments. For this study, a figure of 1,400 billion was used.

Total truck VMT was assumed to be 21 percent of total highway VMT for the entire projection period. Historically, truck travel has generally ranged between 19 and 21 percent of total VMT.

The ratios of VMT by gasoline-powered vehicles to total truck VMT were derived using data from Jack Faucett Associates (JFA) Trucking Activity and Fuel Consumption, 1973, 1980, 1985, and 1990, July 1976. Once the ratios for 1973, 1980, and 1985 were calculated, the ratios for intervening years were obtained by interpolation. The ratios were then used to develop estimates of VMT by gasoline-powered trucks.

For this analysis, all nontruck VMT was considered to have been performed by automobiles and the resulting fuel consumed to be gasoline. Travel and fuel consumption by diesel-powered buses represent such a small portion of the total that they were not considered to affect the estimates significantly.

2. Estimates of Gasoline Consumption

The JFA estimates of travel and fuel consumed by gasoline-powered trucks were used to estimate weighted average miles per gallon rates, which were then divided into our VMT estimates to obtain gasoline consumption for gasoline-powered trucks.

In estimating annual miles per gallon rates for automobiles, the following assumptions were made:

- a. The mandatory fuel efficiency standards for each model year would be met by domestic manufacturers. However, in actual use, each model year is assumed to fall short of the standards by 15 percent.
- b. The fleet average MPG of foreign cars in the United States is assumed to have been 20.0 in 1975 and to grow linearly to 31.0 in 1987.
- c. Foreign automobiles are assumed to comprise a constant 15 percent of the American auto fleet.

The resulting MPG rates were divided into the passenger vehicle VMT to obtain gasoline consumption.

The total highway gasoline consumption is the sum of the two components. Total gasoline consumption was estimated by multiplying the highway use by a ratio of 1.035. (In 1975 nonhighway use equaled 3.67 percent of highway use and 3.5 percent of the total. Historically, nonhighway use as a percent of the total use has been dropping.)

Estimates of State Fuel Tax Revenue

For both the low and high estimates, the State fuel tax revenue was derived by applying the weighted average rate for 1975 of 7.66 cents per gallon to the estimates of highway fuel use.

TABLE A-1 ESTIMATES OF TRAVEL, GASOLINE CONSUMED, AND GASOLINE TAX REVENUES TO THE STATES 1976-1985

YEAR	TOTAL VMT (MILLIONS)	TRUCK VMT (MILLIONS)	GASOLINE POWERED TRUCKS			
			VMT AS PERCENT TOTAL TRUCK VMT	VMT (MILLIONS)	MILES PER GALLON	GASOLINE CONSUMPTION (MILLION GALLONS)
HIGH FORECAST						
1976	1,400,000	294,000	82.34	242,080	9.90	24,453
1977	1,457,400	306,054	82.03	251,056	9.95	25,232
1978	1,517,153	318,602	81.73	260,393	10.00	26,039
1979	1,579,356	331,665	81.41	270,008	10.04	26,893
1980	1,644,110	345,263	81.10	280,008	10.08	27,779
1981	1,711,519	359,419	80.83	290,518	10.17	28,707
1982	1,781,691	374,155	80.56	301,419	10.16	29,667
1983	1,854,740	389,495	80.29	312,726	10.20	30,659
1984	1,930,784	405,465	80.02	324,453	10.24	31,685
1985	2,001,946	422,089	79.76	336,658	10.28	32,749
LOW FORECAST						
1976	1,400,000	294,000	82.34	242,080	9.90	24,453
1977	1,436,400	301,644	82.03	247,439	9.95	24,868
1978	1,473,746	309,487	81.73	252,944	10.00	25,294
1979	1,512,063	317,533	81.41	258,504	10.04	25,747
1980	1,551,377	325,789	81.10	264,215	10.08	26,212
1981	1,591,713	334,260	80.83	270,182	10.12	26,698
1982	1,633,098	342,951	80.56	276,281	10.16	27,193
1983	1,675,558	351,867	80.29	282,514	10.20	27,697
1984	1,719,123	361,016	80.02	288,885	10.24	28,211
1985	1,763,820	370,402	79.76	295,433	10.28	28,739

TABLE A-2 ESTIMATES OF TRAVEL, GASOLINE CONSUMED, AND GASOLINE TAX REVENUES TO THE STATES 1976-1985

YEAR	PASSENGER VEHICLES			TOTAL HIGHWAY USE OF GASOLINE (MILLION GALLONS)	STATE FUEL TAX REVENUES (MILLION DOLLARS)	TOTAL GASOLINE USAGE (MILLION GALLONS)
	VMT (MILLIONS)	MILES PER GALLON	GASOLINE USED (MILLION GALLONS)			
HIGH FORECAST						
1976	1,106,000	13.62	81,204	105,657	8,093.3	109,355
1977	1,151,346	14.11	81,598	106,830	8,183.2	110,569
1978	1,198,551	14.59	82,149	108,188	8,287.2	111,975
1979	1,247,691	15.18	82,193	109,086	8,356.0	112,904
1980	1,298,847	15.86	81,895	109,674	8,401.0	113,904
1981	1,352,100	16.67	81,110	109,817	8,412.0	113,661
1982	1,407,536	17.58	80,065	109,732	8,405.5	113,573
1983	1,465,245	18.44	79,460	110,119	8,435.1	113,973
1984	1,525,319	19.36	78,787	110,472	8,462.2	114,339
1985	1,587,857	20.34	78,066	110,815	8,488.4	114,694
LOW FORECAST						
1976	1,106,000	13.62	81,204	105,657	8,093.3	109,355
1977	1,134,756	14.11	80,422	105,290	8,065.2	108,975
1978	1,164,259	14.59	79,798	105,092	8,050.0	108,770
1979	1,194,530	15.18	78,691	104,438	8,000.0	108,093
1980	1,225,588	15.86	77,275	103,487	7,927.1	107,109
1981	1,257,453	16.67	75,432	102,130	7,823.2	105,705
1982	1,290,147	17.58	73,387	100,580	7,704.4	104,100
1983	1,323,691	18.44	71,784	99,481	7,620.2	102,963
1984	1,358,107	19.36	70,150	98,361	7,534.5	101,804
1985	1,393,418	20.34	68,506	97,245	7,449.0	100,649

APPENDIX B

FORECASTING GASOLINE PRICE AND CONSUMPTION CHANGES DUE TO NEP

Crude oil prices before imposition of the COET are shown in Table B-1. The 1977 prices are assumed to be the same as 1976 prices and real prices (1977 dollars) are assumed to remain constant through 1985. This also assumes that there will be no further Organization of Petroleum Exporting Countries (OPEC) action to change prices. Prices are weighted by the 1976 share of production for each crude oil category.

Table B-1
Crude Oil Prices--No COET
(In 1977 dollars)

Year	Old Oil	New Oil	Average Controlled	World Price	Average U.S. Price
1977	5.25	11.28	7.49	13.50	10.80
1985	5.25	11.28	7.49	13.50	10.80

Table B-2 shows the effect of the COET on crude oil prices. According to the Administration bill (H.R. 8444), the tax would be imposed on old oil in 1978 and 1979 to raise the average controlled crude oil price in two stages to the ceiling price for new oil (\$11.28/bbl.). In 1980 the tax would raise the average controlled price to the world price level (\$13.50). After 1980 crude prices are assumed to increase at the same rate as the general level (remain constant in real terms).

Table B-2
Crude Oil Prices--With COET
(In 1977 dollars)

Year	Old Oil	New Oil	Average Controlled	World Price	Average U.S. Price
1977	5.25	11.28	7.49	13.50	10.80
1978	8.27	11.28	9.39	13.50	11.65
1979	11.28	11.28	11.28	13.50	12.50
1980	13.50	13.50	13.50	13.50	13.50
1985	13.50	13.50	13.50	13.50	13.50

A comparison of Table B-1 and Table B-2 shows that average real crude oil prices would increase by about 8 percent a year over the 1978-80 period. According to the report of the Marketing and Mobility panel to the Interagency Task Force on Motor Vehicle Goals Beyond 1980 (March 1976, page 12-4), a 100-percent increase in crude oil prices causes about a 50-percent increase in refined product prices. The 8 percent annual increase in crude oil prices is, therefore, assumed to cause a 4-percent increase in real gasoline prices in 1978, 1979, and 1980. It is assumed that the entire amount of the tax is passed on to consumers.

To determine the effect of these price increases on gasoline consumption, price elasticity estimates from Data Resources, Inc., "A Study of the Quarterly Demand for Gasoline" (page III.2), were used. Annual price elasticity for the first year of the price change is -0.2; by the second year, elasticity is -0.26; and by the third year, elasticity is -0.29. It is assumed that the price change takes effect

at the beginning of each year and that the price effects of each year's tax increase are worked out in 3 years. The effect of the COET is shown to reduce the annual rate of gasoline consumption by 0.8 percent in 1978, 1.84 percent in 1979, 3.0 percent in 1980, 3.36 percent in 1981, and 3.48 percent in 1982.

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UMTA Office of
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Development

THE ROLE OF PUBLIC TRANSPORTATION
IN CONTRIBUTING TO THE GOAL OF
ENERGY CONSERVATION

A Staff Analysis

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THE ROLE OF PUBLIC TRANSPORTATION IN CONTRIBUTING
TO THE GOAL OF ENERGY CONSERVATION

I. Relative Energy Efficiency of Urban Modes

Overall, transit use is about two to three times as energy efficient as private automobile use. The differential is much greater in peak periods, however, when transit is about five to six times as efficient as the automobile:

Mode	Efficiency of Utilization (PMT/gallon)	
	Average	Peak Periods
Urban Auto Average	19	15
Two-Person Carpool		24
Three-Person Carpool		36
Four-Person Carpool		48
Standard Bus Average	47	72
Rapid Rail Average	50	86
Commuter Rail Average	67	87

See Table I of the Appendix for greater detail and for references.

To highlight the relative advantage of transit in peak periods, note that the average transit bus is 1.5 times as energy efficient as a four-passenger standard-size carpool. Even if all-day averages are considered, urban autos would have to carry an average of four passengers for all travel or increase in fuel efficiency to 30 MPG to enable auto efficiency to equal bus transit efficiency.

II. Aggregate Contribution of Transit to Short-Term Energy Savings

Despite transit's great relative advantage, its aggregate contribution to energy conservation is not large in the short-term future.

- | | |
|--|-------------------------------|
| 1. 10/74 USDOT Report on Actions & Recommendations for Energy Conservation through Public Mass Transportation Improvements | 40,000 barrels/day |
| 2. 4/4/75 APTA Mass Transit editorial | 164,000 barrels/day |
| 3. 4/23/75 FEA letter to APTA | 70,000 barrels/day |
| 4. 12/10/75 UMTA staff research paper | 70,000 to 121,000 barrels/day |

When these figures are compared to the 4.9 million barrels a day consumed by highway passenger travel in 1974, it is clear that doubling transit ridership would save no more than 1 to 3 percent of highway passenger energy consumption.

The factors which are most important in limiting transit's impact are the small share of urban passenger trips which it serves (4.8% to 5.7% of total 1972 urbanized area passenger miles) and, conversely, the dominating influence of the automobile.

This dominance is limiting not only in itself, but also in the degree to which it continues to shape an urban environment unfavorable to effective and economic mass transportation. At the present time, given the very large existing capital investment in housing and transportation facilities, it is unlikely that short-term actions can shift more than a very limited number of trips at the margin. That is, a large share of the trip decisions are "locked in" by housing and employment locations on the one hand, and by the substantial existing highway investment on the other hand.

It is only in the long run that opportunities exist to change these conditions -- to restructure metropolitan areas in such a way as to reduce the need for travel and foster travel patterns that can be satisfied by energy-efficient transit modes.

III. Transit's Supporting Role in Energy Conservation

In light of existing conditions, it is not realistic to expect transit to play a major role in energy conservation in the near term. Rather, transit plays a supporting role in a short-term urban transportation energy plan whose emphases are:

1. improving automobile fuel economy;
and
2. discouraging unnecessary and low-occupancy automobile travel.

Under the first part of this plan, if present mandatory auto fuel economy standards are met, the President's goal of a 10% reduction in gasoline consumption by 1985 could be met and auto travel could increase 3% per year. However, from 1965 to 1974 national automobile VMT increased 5% annually; and the NTS estimates that 1972 - 1980 auto VMT will increase 3.5% annually. Furthermore, the lowered operating cost per mile which high auto fuel economy may bring about may lead to an increase in auto travel which could outweigh fuel economy savings.

Thus, technology-based programs to improve vehicle efficiency, while providing an important means of conservation, are not sufficient and must be supplemented by a reduction in unnecessary and low-occupancy auto travel. The Transportation System Management requirement is the primary DOT tool to achieve this reduction through diversion of motorists to transit and promotion of ride-sharing.

IV. Near-Term Opportunities for Transit Energy Conservation

The specific opportunities for transit to contribute to energy conservation in the near term may be considered to fall into two categories:

1. Diversion of trip-makers to transit from less-efficient automobiles; and
2. Ensuring that mass transit itself is as energy-efficient as possible through operation and technological improvements.

A. Diversion of Trip-Makers to Transit

Diversion of motorists to transit is a difficult task, as evidenced by the fact that the rather precipitous decline in transit ridership was not checked until something on the order of 1 to 2 billion dollars in UMTA program funds had been expended; and the entire program obligation to date of some 6.5 billion dollars has yet to result in a major up-

turn in ridership. There is apparently a substantial lag between program commitment and any impact on output.

However, part of the reason for this lag may have been the continued support of programs which underwrite private automobile travel and also the lack of any meaningful automobile management policies. To the extent that the TSM requirement and energy awareness result in effective auto management, this gap between transit funding and transit ridership may be reduced.

Certainly auto disincentives such as downtown parking restrictions are believed to be a less expensive and probably more effective alternative with respect to energy conservation than transit funding. Auto disincentives will not only generate mode shifts to transit, but will also cause additional fuel savings through increased carpooling/vanpooling, shorter trip lengths, and trip elimination. Auto disincentives are, however, politically unappealing and the prospect for their widespread application is not good. They are most likely to be considered, to be implemented, and to be effective in cities where convenient, accessible, and reliable transit service is available. A recent study has shown that the effectiveness of policies which provide disincentives to auto travel is roughly proportional to the adequacy of the transit service. Such policies applied to systems with a poor level of service will be less productive than the same policies applied to transit systems which offer a convenient alternative to the automobile.

This study combines with real-world experience to bring out a related point--that policy actions are not equally effective in different situations, in different types of cities, or for different communities within a city. Effectiveness is dependent upon the characteristics of the area, such as the downtown population density, socioeconomic status, and the existing quality of transit service. This circumstance argues for tailor-made application of strategies, the most successful of which will probably be some combination of both increased transit service and auto disincentives.

B. Ensuring that Mass Transit Itself is as Energy Efficient as Possible

Mass transit energy efficiency may be increased through a variety of actions including improved operations and network configuration and greater technological/vehicle efficiency. For example:

1. Express lanes, priority treatment, and auto-restricted zones;
2. Improved scheduling and maintenance;
3. Energy-storage flywheel and regenerative propulsion systems (a demonstration of the energy-storage flywheel retrofitted onto existing NYCTA equipment demonstrated energy savings of 30 to 40%);
4. AC propulsion system with regeneration capability (also expected to result in energy savings in the 30 to 40% range);
5. Diesel/flywheel hybrid for buses (possible savings of 10 to 20%);
6. Diesel/battery hybrid for buses (possible savings of 20 to 25%);
7. Reduction of weight and improvement of accessory effectiveness for buses (possible savings of 10%);
8. Replacement of under-utilized buses with paratransit vehicles at certain times and in certain locations (possible savings of 10 to 15%); and
9. Replacement of diesel buses with electric buses--trolley, battery, flywheel or their hybrids--(possible petroleum savings of 84% through conversion from petroleum to a more abundant form of energy).

While these adjustments will not make a large contribution to national energy conservation, they will provide some savings at the same time that they improve the transit picture by decreasing costs of service and/or increasing the benefits of service to riders.

V. Longer-Term Energy Conservation Potential of Mass Transit

The limits on the potential for short-range energy savings and the extent to which we are locked into existing urban transportation patterns underscore the importance of initiating longer-run energy conservation programs as soon as possible. Almost all current studies of urban transportation and energy conclude that it is critical to reverse the trend toward sprawled low-density land use, to aim toward a clustered, higher density urban environment. This kind of land use is less energy intensive in terms of both residential and transportation energy consumption.

Transit is both a means and an end in this achievement of better land use. As a means it can serve as both the system along which to orient clustering of growth and the Federal program through which to provide guidance and incentives to better local land-use policies. As an end result, transit together with carpooling and vanpooling can provide the high-occupancy service with which to accommodate trip demand most efficiently.

If this higher-density land use can be achieved, transit will be more competitive with the automobile and will be able to serve more riders at a lower cost than it can now. However, there is one sobering point to consider: if automakers achieve the 1985 mandate of a 27.5 MPG average for new cars, transit's relative energy advantage will drop considerably. In fact, the efficiency of a two-passenger, 27.5-MPG automobile will exceed the 1974 average efficiency of transit buses (47 passenger miles/gallon). Thus, higher-density land use is important not only to national energy conservation but also to the viability of transit in attracting higher ridership per vehicle mile--so that transit's attractiveness as a highly efficient urban passenger mode can be maintained.

The gradualness with which long-range energy-conservation programs such as transit must be implemented should not be a deterrent. As the recent past has borne out, changes in transportation and land use may be incrementally small but have cumulatively large impacts. Existing urban transportation patterns are the result of a half-century of development, nurtured by cheap fuel. The growing public awareness of the need to conserve petroleum, supported by other trends such as smaller families and the rising cost of suburban housing and commuting, may lead to the progressive reorganization of metropolitan areas into denser, more clustered patterns of development that are capable of supporting a high level of investment in public transportation.

RELATIVE ENERGY EFFICIENCIES OF URBAN PASSENGER MODES

TABLE I

Vehicle Capacities and Efficiencies

	Vehicle MPG * of Gasoline (or Equivalent*)	Passenger Capacity of Vehicle		Capacity: Passenger Miles Per Gallon	
		Seated	Crushload	Seated	Crushload
<u>A. Automobile</u>					
1974 Urban Average	12.0 a	5		60	
Standard Model	9.9 a	6		59	
Compact Model	19.3 a	5		96	
Taxicab	9.0 a	5		45	
<u>B. Small Bus</u>					
Jitney (residential collection & distribution)	10.8 b	5		54	
Vanpool	9.0 c	12		108	
Mini Bus (residential collection & distribution)	6.5 b	19		124	
<u>C. Standard Bus</u>					
1974 National Average	4.0 d	50	70	200	280
<u>D. Light Rail</u>					
1973 Light Rail National Average	2.9 e	49	60	142	200
1973 Trolley	3.4 f				
PCC	2.7 g	49 g	69 g	132	185
Boeing SLRV	1.3 g	60 g	220 g	78	285
<u>E. Rapid Rail</u>					
1973 National Average	2.5 h	60	150	150	375
<u>F. Commuter Rail</u>					
1974 New York	1.8 j	118 b		212	
1974 Chicago	1.3 j	160 b		208	

* Equivalent MPG of gasoline were computed using the following:

1 gallon of gasoline = 125,000 BTU's

1 gallon of diesel = 133,800 BTU's

1 KWH of electricity = 3,413 BTU's

In addition, metered electricity consumption was multiplied by three to account for a 58 percent loss in energy content during conversion plus an additional 9 percent loss in distribution from power plant to meter.

TABLE II
Efficiency of Vehicular Utilization

	Vehicle MPG of Gasoline (or Equivalent*)	Occupancy of Vehicle (PMT/VMT)		Efficiency of Utilization (PMT/Gallon)	
		Average	Peak Periods	Average	Peak Periods
A. Automobile					
1971 Urban Average (NTS)	12.0 a	1.58 k	1.28 k	19	15
1971 Urban Average (NPTS)	12.0	1.9 m	1.65 m	23	20
Three-Person Carpool	12.0	3	3	36	36
Carpools on Shirley Hwy. Reserved Lanes	12.0		4.63 m		56
Taxicabs	9.0 a	0.7 p		6	
B. Small Bus					
Jitney	10.8 b				
Vanpool	9.0 c		10.0 c		90
Mini Bus	6.5 b				
C. Standard Bus					
1974 Natl. Average (NTS)	4.0 d	11.63 q	18.0 a	47	72
1974 Natl. Average (NPTS)	4.0	21.56 r		86	
City of 300,000	4.0	6.0 a	12.0 a	24	48
City of 3,000,000	4.0	12.0 a	24.0 a	48	96
Shirley Highway Express	4.0	13.7 a	23.0 s	55	92
D. Light Rail					
Trolley	3.4 f	15.0 g		51	
E. Rapid Rail					
1974 Natl. Average (NTS)	2.5 h	21.7 t	34.2 u	50	86
1974 Natl. Average (NPTS)	2.5	39.6 v		99	
New York City Rapid Rail	2.5	23.5 a	50 a	59	115
F. Commuter Rail					
1974 Natl. Average (NTS)	1.5 w	44.6 x	57.45 u	67	87
1974 Natl. Average (NPTS)	1.5 w	55.4 y		84	

* Equivalent MPG of gasoline were computed using the following:

1 gallon of gasoline = 125,000 BTU's

1 gallon of diesel = 138,800 BTU's

1 KWH of electricity = 3,413 BTU's

In addition, metered electricity consumption was multiplied by three to account for a 53 percent loss in energy content during conversion plus an additional

SOURCE LIST FOR TABLES I AND II

- a. Energy Efficiencies of Urban Passenger Transportation, HUFSAW Tech. Study Mem. #6, prepared by Alan M. Voornees & Assoc., Inc., May, 1974.
- b. Characteristics of Urban Passenger Transportation, U.S.DOT, May, 1974.
- c. Information provided by Gerald Miller, Urban Institute, based on survey of the 17 existing employer vanpool programs.
- d. Derived from 1974 APTA data showing bus VMT = 1,402.2 million miles and 1974 fossil fuel consumption = 352.6 million gallons of gasoline (including equivalent for diesel and propane fuel).
- e. Derived from 1973 APTA data showing light-rail VMT = 31.2 million miles and 1973 energy consumption by light rail = 140 million KWH (for which equivalent gallons of gasoline are equal to 140 million KWH $\times 3 \times 3,413$ BTU/KWH $\div 125,000$ BTU/gallon of gasoline).
- f. Derived from 1973 APTA data showing trolley VMT = 25.7 million miles and electricity consumed by trolley = 93 million KWH (multiplied by 3.0 to account for conversion and distribution power loss).
- g. Draft Study of Light Rail Transit for American Cities, by DeLeuw Cather & Co., Oct., 1975
- h. Derived from 1973 APTA data showing rapid rail VMT = 436.1 million miles and 1973 rapid rail energy consumption of 2,098 million KWH (for which equivalent gallons of gasoline are equal to 2,098 million KWH $\times 3 \times 3,413$ BTU/KWH $\div 125,000$ BTU/gallon of gasoline).
- j. Derived from VMT and energy consumption data provided to UMTA in March, 1975 by 26 largest cities.
- k. 1974 National Transportation Study, Office of the Secretary, DOT.
- m. National Personal Transportation Study, Federal Highway Administration.
- n. Data provided by Don Rosen, FHWA, for observed occupancies of carpools during 6-9 AM peak on Oct. 7, 1975 on the reserved lane of Shirley Highway, D.C. (carpools must contain four or more occupants to use the lane).

- p. Guidelines to Reduce Energy Consumption Through Transportation Actions, by Alan M. Voorhees & Assoc. for UMTA, May, 1974.
- q. Derived from NPTS estimate of average urban bus transit passenger trip length = 4.1 miles, APTA 1974 revenue passenger count = 3,978 million, and APTA 1974 bus VMT = 1,402 million miles.
- r. Derived from NPTS estimate of average bus transit passenger trip length = 7.6 miles, APTA 1974 bus revenue passenger count = 3,978 million, and APTA 1974 bus VMT = 1,402 million miles.
- s. Data available within UMTA, provided by J. Bautz; 46.0 passengers per one-way trip, adjusted for reverse flow deadheading.
- t. Derived from NPTS estimate of average rapid rail transit passenger trip length = 6.6 miles, APTA 1974 rapid rail revenue passengers = 1,435 million, and APTA 1974 rapid rail VMT = 436 million miles.
- u. 1974 National Transportation Report, p. V-17.
- v. Derived from NPTS estimate of average rapid-rail transit passenger trip length = 12.03 miles, APTA 1974 rapid-rail revenue passengers = 1,435 million, and APTA 1974 rapid-rail VMT = 436 million miles.
- w. Derived by averaging New York City and Chicago commuter-rail energy-consumption data from Table I.
- x. Derived from NPTS estimate of average commuter-rail passenger trip length = 21.6 miles, UMTA data showing 256 million revenue passengers on commuter rail in 1974 and UMTA data showing 124 million VMT by commuter rail in 1974.
- y. Derived from NPTS estimate of average commuter-rail passenger trip length = 26.82 miles, UMTA data showing 256 million revenue passengers in 1974 and UMTA data showing 124 million VMT by commuter rail in 1974.

Accuracy and Reliability of Basic Data

It should be clear at the outset that there are substantial deficiencies in many of the primary data items necessary to this analysis. Different sources report greatly varying values for important individual data items (e.g., NPTS transit trip lengths are almost twice the trip lengths reported by HTS). Even the reported energy value of gasoline varies, from 125,000 BTU's per gallon to 136,500 BTU's per gallon. Other necessary data items, such as average seat capacity of commuter rail and average peak-period occupancy of transit modes, do not exist and must be interpolated based on secondary indicators whose accuracy is questionable. In addition, most of the future data values (e.g., 1980 average trip lengths) cannot be predicted confidently even if the socio-economic and political environment is specified. Consequently, this analysis, and indeed all quantitative urban transportation energy analyses, should be treated with caution. A rigorous effort was made to utilize the best available and most consistent data, but the accuracy of urban transportation and energy measures must be improved before quantitative analysis can be a reliable determinant of critical policy and investment decisions.

Relative Energy Efficiencies

The relative energy efficiencies of a variety of urban passenger transportation vehicles have been calculated and are summarized in Tables I and II. Table I illustrates the potential energy efficiencies of vehicles in terms of available seat miles per gallon of gasoline (or gasoline equivalent if the vehicle is powered by diesel fuel or electricity) and crushload capacity per gallon. Table II presents the actual energy efficiencies of vehicles in terms of actual passenger miles travelled per gallon of gasoline (or equivalent) for both peak and off-peak periods. For some modes two calculations are presented, largely because of significant differences in travel characteristics as reported by two national transportation studies (the National Transportation Study by OST and the National Personal Transportation Study by FHWA).

The large differences between Tables I and II point up the degree to which actual energy efficiencies fall short of the potential, a shortcoming which cuts across all modes. Only in special work-trip situations in which high vehicle occupancy is required (vanpool programs and Shirley Highway four-or-more-occupant carpool lanes) does actual energy efficiency closely approach the potential. In fact, except for rapid rail in peak periods, no other modes for which data are available attain 50 percent of the potential energy efficiencies. While it is certainly unrealistic to expect 100 percent load factors for most travel, there is potential for both (1) significant improvement in overall averages, and (2) expansion of special, guaranteed-

high-occupancy transportation within all modal categories.

Disregarding potential efficiencies for the moment and focussing on Table II, it is apparent that throughout the day transit is delivering three to four times the amount of passenger mileage that the urban auto delivers for equal energy inputs. The difference is even greater during peak periods, when urban buses and rapid-rail vehicles are five to six times as efficient as the urban automobile.

Even when compared to special, high-occupancy vanpool and carpool programs, urban buses and rail are almost as or more energy efficient during peak periods. Thus, while non-transit and para-transit energy efficiencies can be improved significantly through special programs guaranteeing high-occupancy, peak-period transportation to selected groups, bus and rail transit provide an equally efficient alternative for area-wide, public transport.

ENERGY SAVINGS ATTRIBUTABLE TO TRANSIT
IN 1974 and 1980

Gross and net energy savings attributable to transit were calculated for 1974 and three 1980 scenarios. Each of these scenarios was defined in terms of, first, transit load factors and, second, the necessary complementary degree of socio-economic and political emphasis placed on energy conservation. This approach was chosen to assure internally consistent and realistic scenarios. It was felt that any significant changes in transit load factors over the 1974-1980 period would be plausible only as a result of significant economic and political forces which would also impact upon auto occupancy, auto fuel economy, and other primary determinants of transit energy savings.

The two base cases and three scenarios are described in detail later in this Appendix, but in general they consist of:

	Average Transit Load Factor	Socioeconomic & Political Forces	Net Annual Operating Energy Savings
1974 Base Case 1	28%	Those currently existing (as measured by NTS).	1,063 million gallons of gasoline.
1974 Base Case 2	49%	Those currently existing (as measured by NPTS).	1,850 million gallons of gasoline.
1980 Scenario 1	41%	Conservative extension of existing trends.	1,455 million gallons of gasoline.
1980 Scenario 2	53%	Moderate, energy-conserving social change.	1,579 million gallons of gasoline.
1980 Scenario 3	61%	Significant, energy-conserving social change.	1,537 million gallons of gasoline.

(Net savings are calculated by estimating direct operating energy which would have been consumed if transit passenger trips were made by alternative modes, primarily auto, and subtracting direct operating energy actually consumed by transit.)

When compared to the approximately 43,000 million gallons of gasoline consumed by urban passenger cars and taxis in 1973, it is apparent that transit directly accounts for relatively small volumes of energy conserved, both in the base cases and under all three 1980 scenarios. This is true despite the fact that more than a doubling of the 1974 Base Case 1 transit occupancy is assumed in Scenario 3,

because the significant eco-political pressure necessary to achieve this doubling also acts to force more efficient (higher-occupancy, lower-fuel-consumptive) auto travel. This then diminishes the energy savings which could otherwise be attributed to transit.

Following are descriptions of the two 1974 base cases and the three 1980 scenarios, which are also set forth in Table III.

1974 Base Case 1: Derived from NTS Data (transit load factor of 28%)

This first base case reflects an average transit load factor of 28%, which is derived from 1974 APTA data on transit revenue ridership and transit VMT and from NTS estimates of average trip lengths by urban bus, rapid rail, and commuter rail passengers (load factor = revenue ridership x average trip length ÷ transit VMT x average number of seats per vehicle).

The proportion of transit riders who would otherwise make the trip as auto drivers is assumed to be 63%, the inverse of the HTS-reported 1.58 urban car occupancy. While this overlooks that unknown proportion of riders who would otherwise walk, bicycle, or forfeit the trip, its effect on energy savings is somewhat counterbalanced by using passenger trip lengths which are biased downward by inclusion of this same shorter trip-making group.

By incorporating an average urban auto fuel consumption of 0.083 gpm (12 mpg), it is possible to calculate gross transit energy savings (= ridership x proportion of auto drivers x average transit passenger trip length x auto fuel consumption) from which transit

energy consumption ($=$ transit VMT $\times$ transit fuel consumption) can be subtracted, to yield the net annual energy savings attributable to transit.

1974 Base Case 2: Derived from NPTS Data (transit load factor of 49%)

This second base case differs from the first in only two respects: average transit passenger trip lengths and average urban auto occupancies are taken from the NPTS instead of the NTS. Although this increases auto occupancies, thus dampening transit energy savings, it greatly increases transit passenger trip lengths and transit occupancy, so that net energy savings are almost 75 percent higher than in Base Case 1. (It is probably realistic to assume that actual 1974 transit energy savings lie somewhere between Base Case 1 and Base Case 2.)

1980 Scenario 1: Conservative Extension of Existing Trends (transit load factor of 41%)

In this scenario there is no meaningful additional economic or political pressure to conserve urban transportation energy. Thus there is only a slight increase in the average transit load factor, from 38.5% (the average of Base Cases 1 and 2) to 41% by 1980.

Transit revenue ridership increases 3% annually for each mode. The proportion of transit riders who would otherwise be automobile drivers (as opposed to passengers, pedestrians, bicyclists or induced-trip makers) remains constant at 53%, while average transit passenger trip lengths increase slightly above the average for Base Cases 1 and 2 (following an established increasing trend and reflecting both con-

tinued urban sprawl and relatively greater ridership gains among longer trip makers).

Transit VMT increases 4% annually; this is a slightly higher rate of increase than that for transit ridership, but the overall impact upon load factors is a very small increase due to the slight increases in passenger trip lengths. Improvements in transit fuel economy are very small, reflecting constraints on internal engine and electrical generating efficiencies. Although the 40% improvement in new car fuel economy is achieved by 1980, sufficient older and less efficient vehicles remain on the road to limit the average fuel economy of all urban autos to 14 mpg (0.071 gpm), up from 12 mpg in 1974.

The net result of these changes is a transit energy savings of 1,455 million gallons (35 million barrels) in 1980, almost exactly equal to the average of the 1974 Base Cases. This occurs largely because in this conservative scenario, most changes are minor, and improvements which would increase energy savings (as in transit load factors and ridership) are offset by other changes (as in auto fuel efficiency) which diminish energy savings attributable to transit.

1980 Scenario 2: Moderate, Energy-Conserving Social Change (transit load factor of 53%)

In this scenario there are assumed to be a variety of moderate economic and political pressures to conserve fuel, resulting in an improvement in the average transit load factor to 53% (up approximately

15 percentage points or 39% from the average Base Case). This is accomplished by equal increases (4% annually) in both transit revenue ridership and transit VMT, while 1980 transit passenger trip lengths increase approximately 38% above the average for the Base Cases.

The higher ridership occurs as a result of higher gasoline prices, increased use of auto disincentives, and a combination of more flexible work hours and transit fare and service policies designed to attract off-peak ridership. Longer average passenger trip lengths result from relatively greater gains in ridership by longer-distance commuters.

The proportion of transit riders who would otherwise drive an auto decreases moderately because of the increased importance of carpooling. Auto fuel economy increases from 12 mpg to 15 mpg (0.083 gpm to 0.067 gpm). Bus fuel economy increases modestly from 4.0 mpg to 4.4 mpg as a result of dieselization, greater importance of TSM, and more line-haul suburban service with fewer stops and higher speeds. There is no further improvement from Scenario 1 in rapid, light, and commuter rail fuel economies due to technological limitations.

The net result of this scenario is a transit energy savings of 1,579 million gallons (38 million barrels) in 1980, about 10% higher than both Scenario 1 and the averaged Base Case. The savings are still a small portion of urban transportation energy consumption.

The result of this greater emphasis on energy conservation is an energy savings attributable to transit of 1,537 million gallons (36 million barrels) in 1980. This is a slight drop from Scenario 2's savings because 1980 automobile fuel economy increases sufficiently to more than offset increases in transit ridership and load factors.

TABLE III
Gross and Net Annual Energy Savings Attributable to Transit

	Transit Load Factor ^a	Transit Occupancy (PMT/WT) ^b	Revenue Ridership (millions)	Proportion of Transit Riders Who Would Drive	Avg. Pgr. Trip Lgth. (miles)	Auto Gals. of Gas Per Mile	Gross Energy Savings (million gals.) ^f	Transit VMT (million miles)	Transit Gals. of Gas Per Mile	Gross Energy Consumption ^d (million gals.)	Net Energy Savings ^e (million gals.) ^f
1. 1974 Base Case (NITS)											
Bus	23%	11.63	3,977.5	0.63	4.1	0.083	852.7	1,402.2	0.25	350.6	502.1
Rapid & Light Rail	37%	22.14	1,628.4	0.63	6.6	0.083	562.0	1,495.4	0.43	208.7	353.3
Commuter Rail	34%	44.59	256.0	0.63	21.6	0.083	289.1	124.0	0.66	81.8	207.3
Total	28%	16.20	5,861.9	0.63		0.083	1,703.8	2,011.6		641.1	1,062.7
2. 1974 Base Case (NPTS)											
Bus	43%	21.56	3,977.5	0.53	7.6	0.083	1,329.8	1,402.2	0.25	350.6	979.2
Rapid & Light Rail	67%	40.26	1,628.4	0.53	12.0	0.083	859.6	1,495.4	0.43	208.7	650.9
Commuter Rail	43%	55.33	256.0	0.53	26.8	0.083	301.8	124.0	0.66	81.8	220.0
Total	49%		5,861.9	0.53		0.083	2,491.2	2,011.6		641.1	1,850.1
3. 1980 Scenario 1											
Bus	35%	17.45	4,749.3	0.53	6.3	0.071	1,125.9	1,705.0	0.24	409.4	716.5
Rapid & Light Rail	55%	33.21	1,944.3	0.53	10.5	0.071	768.2	1,614.0	0.42	257.9	510.3
Commuter Rail	42%	55.74	305.6	0.53	28.6	0.071	328.9	156.9	0.64	100.4	228.5
Total	41%		6,999.2	0.53		0.071	2,223.0	2,476.9		767.7	1,455.3
4. 1980 Scenario 2											
Bus	47%	23.26	5,032.8	0.46	7.9	0.067	1,222.3	1,705.0	0.23	392.4	829.9
Rapid & Light Rail	74%	44.28	2,060.4	0.46	13.2	0.067	838.2	1,614.0	0.42	257.9	580.3
Commuter Rail	42%	55.74	323.9	0.46	27.0	0.067	269.5	156.9	0.64	100.4	169.1
Total	53%		7,417.1	0.46		0.067	2,330.0	2,476.9		750.7	1,579.3
5. 1980 Scenario 3											
Bus	56%	29.08	5,642.2	0.46	8.6	0.058	1,294.6	1,674.3	0.22	368.3	926.3
Rapid & Light Rail	74%	44.28	2,309.9	0.46	11.1	0.058	684.1	1,579.6	0.42	243.4	440.7
Commuter Rail	51%	66.89	363.1	0.46	27.3	0.058	264.5	148.1	0.64	94.8	169.7
Total	61%		8,315.2	0.46		0.058	2,243.2	2,402.0		706.5	1,536.7

a. Load Factor = Revenue Ridership x Average Trip Length ÷ Transit VMT x Seats Per Vehicle

b. Transit Occupancy = Revenue Ridership x Average Trip Length ÷ Transit VMT

c. Gross Energy Savings = Revenue Ridership x Proportion Who Would Drive x Average Trip Length x Auto GPM

d. Gross Energy Consumption = Transit VMT x Transit GPM

e. Net Energy Savings = Gross Energy Savings - Gross Energy Consumption

UPP STAFF PAPER CITING THE CASE FOR TRANSIT

Most contemporary analyses of the role of mass transit in conserving energy recognize two points:

- (1) Transit is generally much more energy efficient than the private automobile; but
- (2) Because transit ridership comprises only a small portion of urban passenger travel, it is not practical to expect large near-term energy savings from transit programs alone.

Unfortunately, the apparently conflicting implications of these two conclusions--on the one hand that transit programs should be expanded to conserve energy and on the other hand that the results will be proportionately small--make it difficult to determine:

- (1) to what extent policies and funding in support of transit can be justified by energy savings; and
- (2) how much emphasis energy conservation programs should place on transit in achieving national goals.

The following points are intended to shed light on the answers to these questions.

I. On an average daily basis transit consumes only 38 percent of the energy per passenger mile that urban autos consume (based upon data from the 1974 National Transportation Study, which is much more conservative than data from the National Personal Transportation Study). To be as fuel-efficient as transit is now (i.e., assuming no increases in transit occupancy or fuel efficiency), the average urban auto fuel economy would have to increase to 31 mpg, over 250 percent of its current fuel economy. For purposes of comparison, the current 1980 goal, for the new car fleet only, is a 40 percent improvement, to about 17 mpg in urban travel.

From an alternative perspective, average urban auto occupancy would have to increase to 4.2 PMT/VMT, also over 250 percent of current urban auto occupancy. It is therefore preferable to accommodate individual urban trip demand with transit vehicles which are only 28 percent full (the 1974 average load factor for transit vehicles according to the NTS) rather than to provide autos whose fuel efficiency is 30 mpg (occupancy of 1.6) or whose occupancy is 4.1 (fuel efficiency of 12 mpg). This transit-advantage becomes much stronger for the peak-period trips which comprise the largest part of transit travel and if transit occupancy and fuel economy can be increased, which is probable.

II. Transit serves a broad variety of urban needs, especially the provision of urban mobility during weekday peak periods when auto congestion is extensive and throughout the day for the elderly, the poor, the young, and others without access to automobiles. If transit's primary purpose were energy conservation, as is the case for current

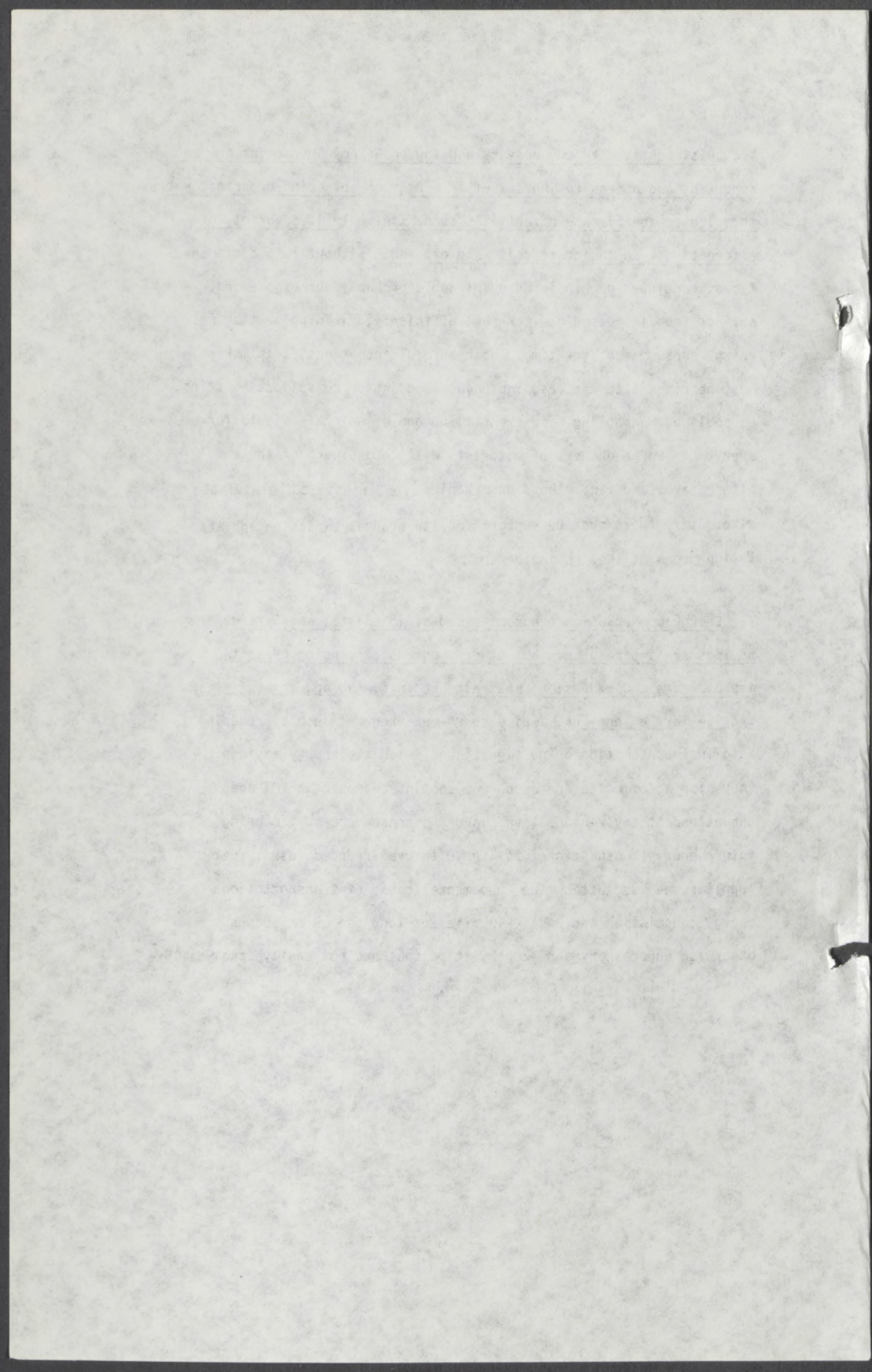
vanpool programs, it could improve its average energy efficiency significantly by curtailing off-peak service when vehicle occupancy is relatively low. But such energy improvements would be achieved at great social cost--a large reduction in mobility for transit dependents.

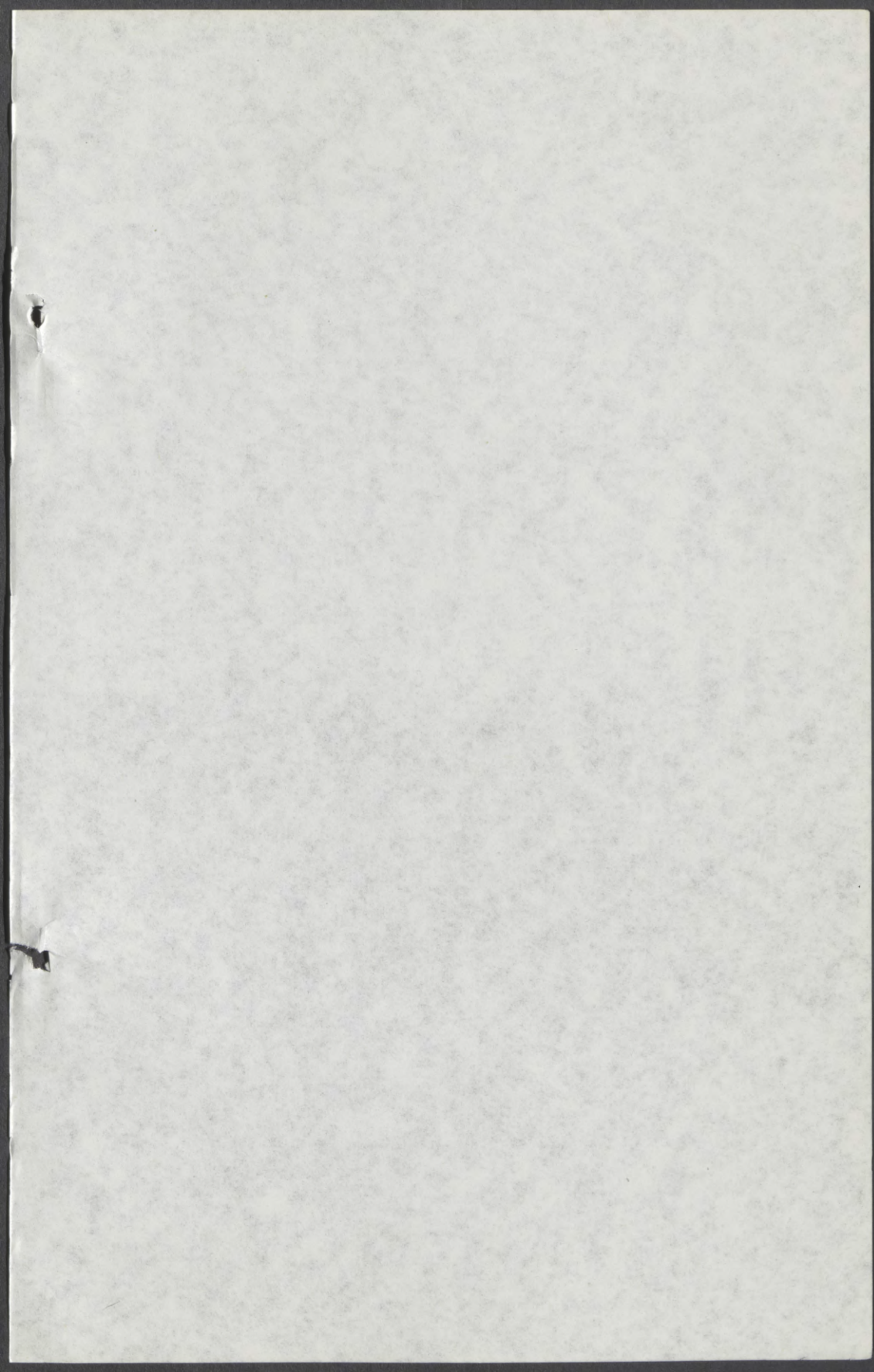
III. Given the necessity for some basic level of transit service during both the peak and off-peak, it behooves us to utilize that service capacity to the maximum extent possible, for both energy and economic purposes. Stated differently, it is necessary to develop social policies which encourage maximum utilization of existing transit capacity, whenever possible prior to deploying new fleets of vehicles, regardless of their energy efficiency.

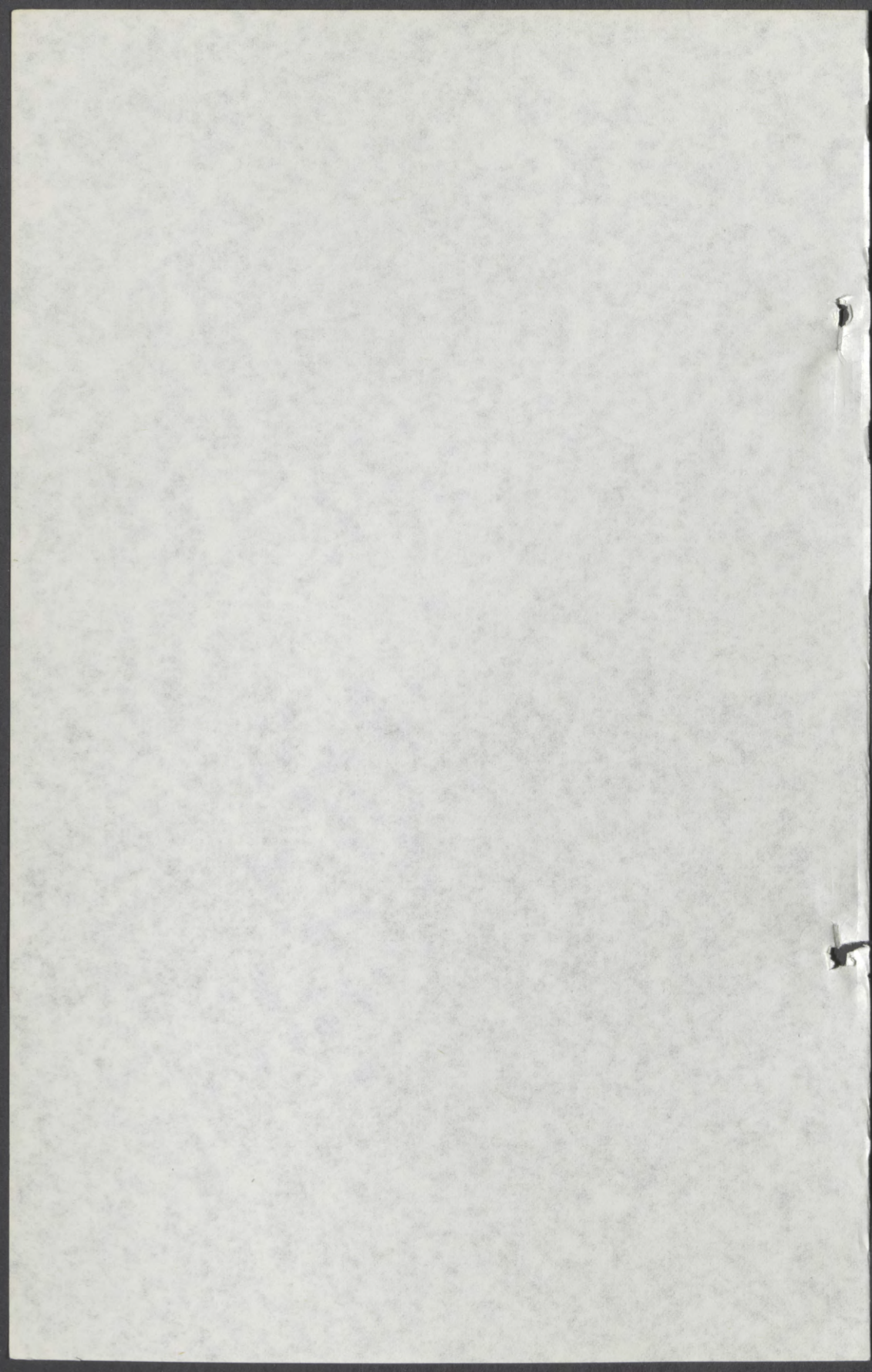
Such maximization is certainly not now occurring in the off-peak and, contrary to popular presumption, it is also not occurring in the peak, when the average current load factor on buses is 36 percent or less. While some of the responsibility for increasing load factors lies with transit operators, significant increases can come only with state, local, and Federal initiatives in areas of staggered work hours, land-use policies, and auto disincentives. The importance of meeting this responsibility cannot be stressed too highly, since there is no energy cost, only energy savings, from diversion of auto drivers to currently operating, underutilized transit vehicles.

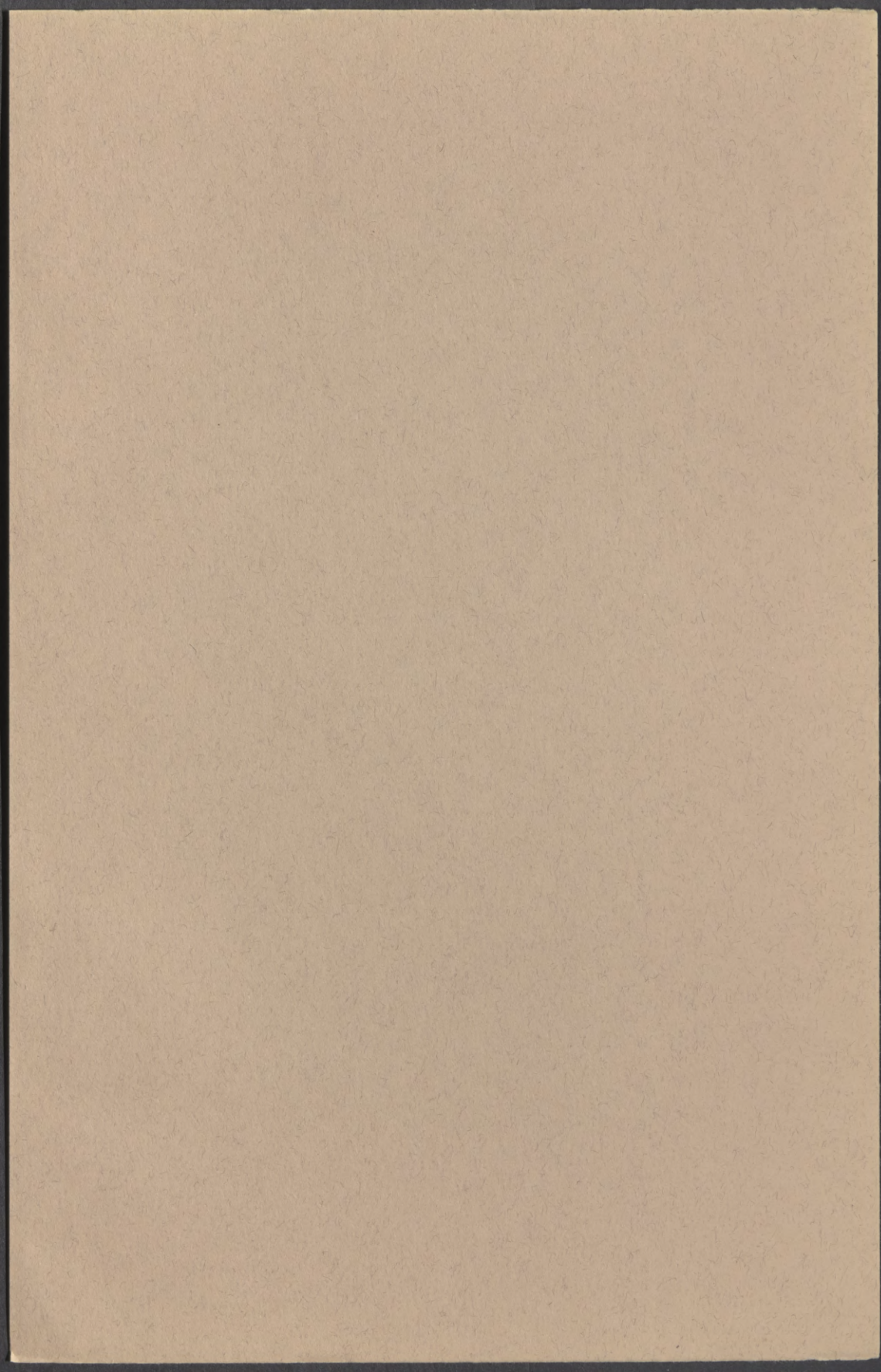
IV. Disincentives to unnecessary and low-occupancy auto trips are an important and necessary ingredient to energy conservation programs, yet they are reasonable and potentially successful only if a variety of alternatives, including transit, are offered. Without auto disincentives, continued growth in auto VMT would probably outweigh energy savings from increased new car fuel efficiency, yielding greater net energy consumption over time. With auto disincentives, trip makers must be given alternatives, including forgoing or consolidating trips, carpooling, vanpooling, and transit, no one of which is viable for everyone. Large numbers of motorists will choose each of these alternatives and find others unworkable. For transit to be a viable alternative there must be support for its gradual expansion and adaptation to meet the growing demand.

V. Energy conservation programs aimed at immediate, short-range savings are important now but other programs, including transit improvements and expansion, must also be initiated now to be effective in the long-run. While short-run programs such as reducing auto fuel consumption bring significant immediate energy savings, they also accommodate and encourage continued growth in VMT and the attendant environmental and land-use consequences. To bring future energy consumption into line with ever-reduced fossil fuel supplies, we must attack the fundamental cause of transportation energy consumption and waste--inefficient land use which spawns otherwise unnecessary and lengthy trips that are not easily accomplished.











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