

Originally Processed With FOIA(s):
2025-0647-S

FOIA Number:
2025-0647-S

FOIA MARKER

**This is not a textual record. This is used as an
administrative marker by the George Bush Presidential
Library Staff.**

Record Group/Collection: George H.W. Bush Presidential Records
Collection/Office of Origin: Chief of Staff, White House Office of
Series: Rogers, Ed, Files
Subseries: Subject Files

OA/ID Number: 04014
Folder ID Number: 04014-030

Folder Title:
Transportation

Stack:	Row:	Section:	Shelf:	Position:
G	15	23	1	

THE WHITE HOUSE
WASHINGTON

February 13, 1991

MEMORANDUM FOR PUBLIC AFFAIRS DIRECTORS

FROM: KRISTEN GEAR *KG*
ASSOCIATE DIRECTOR OF PUBLIC AFFAIRS

SUBJECT: *SURFACE TRANSPORTATION ASSISTANCE ACT OF 1991*

In a White House ceremony today, President Bush unveiled the Administration's new Transportation Assistance Act of 1991.

Enclosed for your use and distribution are the following documents:

1. Remarks by President Bush during the transportation briefing.
2. Press briefing by Secretary Skinner.
3. Fact Sheet on the Surface Transportation Assistance Act of 1991.

Please do not hesitate to call me if you have any questions. I hope this information is useful to you.

THE WHITE HOUSE
Office of the Press Secretary

For Immediate Release

February 13, 1991

REMARKS BY THE PRESIDENT
DURING TRANSPORTATION BRIEFING

Room 450
The Old Executive Building

10:34 A.M. EST

THE PRESIDENT: Mr. Secretary, a special welcome to Senators Riegle and Moynihan, Congressman Larry Coughlin. And let me just welcome all of you to the White House. It's great to have you here. And it's great for me to be with our able Secretary of Transportation, whose baby we are unveiling here.

Thirty-five years ago, President Eisenhower envisioned an interstate highway system that today is reality. And his idea fueled development in this country for a generation and united the states as never before -- economically, politically and socially. So take a look at any map in our country and you'll see President Eisenhower's legacy for a strong America.

Today the interstate system is virtually complete, and Americans enjoy unequalled mobility. But in the years since its construction began, there have been major demographic shifts and travel changes in our country. And we have a remarkable highway system, but as Sam has told you and certainly told me, much of it needs improvement. And we need to move forward to meet the transportation needs of the coming generations. It's time to take the first step on the long road that lies ahead, and the status quo will simply not get us there.

Economic competition in the 21st century is going to be tougher than ever before. We can help build competitiveness and improve the links between workers and jobs and goods and markets. Already transportation accounts for about 20 percent of total consumer spending. And we've got to find ways to expand our nation's mobility for urban Americans, for rural Americans and for Americans with disabilities who are on the move.

So today we're unveiling a blueprint for a National Highway System. This map explains it. Sam has been, I understand, briefing on that here. We've designed new legislation -- the Surface Transportation Assistance Act -- to reform existing highway programs and increase funding for what works to prepare for the next American century.

And to do it, we must invest in our future. So we're investing \$105 billion in our transportation infrastructure over the next five years. Highway investment will increase by 39 percent to \$20 billion by 1996. And funds for capital investment in mass transit will increase by 25 percent. And we've proposed a 34 percent increase in funding for highway safety programs over the next five years.

The future of Americans' transportation rests on the new foundation that we're laying today. Building on the success of the interstate system, this bill provides for the designation of a new National Highway System which concentrates federal dollars on the rehabilitation and improvement of our most critical highways. It creates a new urban-rural block grant that will streamline narrow highway grant programs into a larger, more flexible block grant.

The legislation will reduce the backlog of bridges

MORE

needing repair and replacement. It promotes efficiency by cutting red tape for the trucking industry. The bill also focuses attention on the needs of our cities where millions of our citizens depend on public transit. Mass transit in urban areas will be maintained and improved. And under this legislation funding for it will become more stable and equitable.

Our approach will provide states and localities with flexibility to select which highways will receive targeted federal dollars, and states and localities will be able to choose whether to spend federal dollars on transit or highway solutions.

As never before, we are encouraging creative new financing and management by the states. This bill is a good one. And we believe it will draw broad support from all sectors -- the states, the cities, the transportation industry and the Congress. And as part of this administration's national transportation policy, it will move us into the next American century.

With this legislation, America is on the road to expanded productivity, more jobs, and a strengthened infrastructure for a stronger United States.

Sam, you've been dubbed the "road warrior." (Laughter.) I don't whether it's just by yourself or by all the rest of us, but nevertheless, I -- (laughter) -- since you've already been dubbed that, I want you -- and I see we've got some heavyweights here in the front rows -- to ask for their support. But I really hope that you can bring back a bill that I can enthusiastically sign this fall or perhaps sooner. I don't know what your legislative schedule is.

But in any event, I think we're off to a good start. And I'm grateful to you and the people at the Department of Transportation who have put so much of their hearts and souls into formulating this new approach. So to all of you who have been a part of -- direct or indirect -- my sincere thanks. We're going to work hard to make this become a reality. And thanks for coming over here today.

And God bless you all. Thank you very, very much.
(Applause.)

END

10:40 A.M. EST

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

February 13, 1991

PRESS BRIEFING BY
SECRETARY OF TRANSPORTATION SAMUEL SKINNER

Room 450
Old Executive Office Building

10:10 A.M. EST

SECRETARY SKINNER: Ladies and gentlemen, thank you very much for coming -- some of you on very short notice. And let me especially thank the members of Congress who are here, the members of the committees who are so vitally involved in what we're to talk about today.

America has made some tremendous investments in our highways and transit since our nation began, but most particularly, over the last 30 years or so. We spent over \$129 billion on the interstate highway system alone by the time it's finished.

That system that exists today exists because of President Bush's predecessor, Dwight D. Eisenhower, and his vision, and also with the support of Congress -- predecessors of the gentlemen who are here today. And that includes the President's own father, Senator Prescott Bush, who was one of the leaders in the United States Senate in pushing President Eisenhower's interstate program forward.

I believe today that Congress is just as forward-looking as the Congress in Senator Bush's day, and it's most appropriate that they be forward-looking because the task that we have before us is a mess. What we are about to begin today is to chart a course that will maintain President Eisenhower's legacy and, at the same time, provide new vision for the 21st century.

If a picture speaks a thousand words, this bridge in Oklahoma on my left and this congestion on Interstate Five in Seattle on my right illustrates the nature of the problems we face. America's future standing in the world's economy will be seriously jeopardized without the sound infrastructure to support the growing economy. Just as we are making an investment in our future, I was touched not too long ago by the amount of investment that's being made in countries all over the world to increase productivity and to stay current. So what we're doing is not only increasing our own productivity, but we're staying competitive with investments in an infrastructure in other parts of the world, including the Pacific Rim and in Europe. And it's absolutely vital if we're going to stay competitive with those economies.

The chart on my left shows the condition of some of our interstate bridges. And we've made progress in fixing them, but it also shows that we've got a long way to go. The Surface Transportation Assistance Act of 1991 set the United States of America on the right course for the 1990's and beyond. The chart on my right shows the dramatic increase in federal funding for surface transportation programs, including STAA. Highway funding increases 39 percent from '91 to '96. Transit goes up 25 percent in '96 as compared to '91. Funding for highway safety activities rises by 34 percent. And the total funding is \$105 billion over five years.

I'd like to discuss five major themes of the President's bill. Number one, it proposes better stewardship in spending on

MORE

transportation dollars and in the use of our existing highway and transportation infrastructure. It provides state and local governments with greater flexibility to make more efficient use of scarce financial resources. The Urban Rule Program that you will hear about removes existing barriers in categorical grant programs and highway funds can be used in transit programs and vice versa. And I believe in urban areas this is a very, very important part of our program.

It implements performance-based management methods by requiring states to have bridge, pavement congestion and safety management systems. Several states have done this -- states that lead the nation in technology and the use of these techniques -- and good data collection and analysis of highway system performance helps them target their funds toward more cost-effective improvements.

It's pretty clear to us that if, in fact, we are going to stay ahead of the power curve, as we say in aviation, it's absolutely essential that we use the technology that's available today and use that to eliminate and deal with some of the problems that we face.

National goals are established in the program by the establishment of different federal shares for different priorities. To maintain what we have and to preserve the interstate system and to finish it, it will provide 90 percent for interstate rehabilitation and operational improvements.

The other projects on the National Highway System -- NHS, which we'll talk about in a minute -- will be 75 percent federally funded. And the ratio for the urban rule program will be 60 percent and 40 percent to stimulate more state and local shares, more state and local investment, and to stimulate and encourage more state and local responsibility. Just as we give them more flexibility, we're going to expect them to take more responsibility.

Of course, obviously, in the programs that we talk about, the states and the local organizations will have the ability to mix the programs in those areas where it's appropriate.

The bill supports increased mobility of people and goods. Congestion, which we talked about a moment ago, costs the interstate commerce system in this country over \$35 billion a year, and that, of course, seriously hampers America's productivity.

I was moved as I visited in Senator Riegle's state recently at an automobile plant just how important this is. The plant manager came up to me as soon as I arrived and was quick to point out that he had an inventory of seats that would allow him just four hours-worth of production, even though he produced cars, at least at that period, at two shifts a day. Having said that, he pointed out it really was not a problem because every hour he ordered seats from an independent company 40 miles away and those seats were delivered -- manufactured, packaged and delivered within four hours.

That is what we call in this country just-on-time inventory systems. That is important because of course the automobile manufacturer's inventory costs were held to an absolute minimum. The manufacturer of the seats knew that he could get rid of his product and move it quickly through the system. And he pointed out that the key link there to this system was the interstate highway link between the two facilities.

That's, I think, a real live demonstration of what productivity means because in the long run that reduced inventory cost results in a lower-priced product in the American and international markets.

It also supports targeted national highway systems to connect people and jobs, products and markets. U.S. demographics have changed in the past 40 years and we have new hubs, new ports,

MORE

new markets. And the new system that you're going to see in a minute will make sure that all of these are linked. It encourages advance technologies to relieve congestion.

IVHS, Intelligent Vehicle Highway Systems, integrates the driver, the vehicle and the highway through electronic guidance and warning and control systems. High-speed rail and magnetic levitation holds promise for the future and are encouraged in this bill. State of the art toll collection systems can electronically read a car and register a toll without requiring a car to stop.

The bill also keeps rural America connected to the rest of the country. Urban-rural program has funds for highways and transit in rural areas, special bonus funds for federal highways and in mass transit for innovative solutions to address rural transportation problems.

The bill ensures that the new capacity on beltways and bypasses in urban areas will have separate lanes for through traffic. We think this is also very important. Think what this could mean for the Washington Beltway and the interstate traveler. Flexibility is also very important because it will enhance mobility by promoting the best transportation solutions for unique problems for particular areas, and it allows those state and local organizations to plan for such innovations rather than being mandated programs in the use of funds at the national level.

For instance, it allows in particular areas the expanding of rail transit lines which are so important. And it allows a mix for the first time, as I said, of transit and highway funds, but more importantly, it recognizes for the first time in many respects that the right-of-ways that have been developed for so many years are right-of-ways that not only could be made available for automobiles and trucks and commercial traffic, but those right-of-ways also have potential for mass transportation and rail transportation and to protect the right-of-ways.

It makes mass transit accessible to travelers with disabilities. And, of course, Americans with Disabilities Act established a mandate last year, and this act provides the capital to implement that very important legislation.

The President's program also addresses a very, very important part of our nation's energy and environmental concerns. Transportation is responsible for over half of our country's urban air pollution and 62 percent of our oil consumption.

This program enhances energy conservation and efficiency through improved operations and increased flexibility. States now, for the first time, will have the ability to choose various projects for funding, whether it be transit, HOV lanes, accommodations for pedestrians and bicyclists, highway improvements. The flexibility, based upon a local planning effort with environment and conservation of energy in mind, will be much easier to implement as part of this legislation.

Localities, of course, can reduce pollution by better managing traffic through the congestion management system that squeezes all the capacity out of existing facilities. And, of course, it supports mass transit by encouraging drivers to move off the road.

I don't think there's any question that we have a very fine system in this country. And it's important that we maintain that system as we move forward. I also think it's pretty clear to many of you who travel and drive on the highways, as you all do, that we have what I call an inefficient use of many of these resources and many of these facilities. In many cases, if the driver could make an informed decision, they would take an alternative route. Then all the congestion wouldn't be on six lanes of an interstate if there was

MORE

an alternative route available and they knew the condition of that route.

This bill calls for increased funding in technology. Technology is absolutely essential to increasing our productivity. And by using the technology that we're talking about, we're going to have the ability to enhance the utilization of the system that we have.

As many of you know, I spent a considerable amount of time in the computer business. And the Department of Transportation has been in the lead in many areas in the management of traffic and traffic flow both in the air and on the ground with computers. This bill calls for enhanced investment in this research. And there are a number of programs ongoing, and this bill will allow us to not only implement many of these programs, but look even beyond into the next century.

It permits cities with serious air quality problems to experiment with congestion pricing strategies. Cities under this program could impose peak period bridge and tunnel fees to reduce demand. This is common in other parts of the world, and under our legislation this will be permitted. And I don't have to tell you the advantages that that can have towards evening the flow.

It authorized states, as I've said, to use highway funds not only for mass transit and vice versa, but also use highway funds to prepare for the first time wetlands conservation plans and help create wetlands banks to earn credits to be used for future construction. It allows states to look forward today and take steps today to prepare for the future.

Safety is an essential part of the Department of Transportation. Preliminary data for 1990 shows that we had the lowest motor vehicle fatality rate in history. But 44,500 deaths is still far too many. The chart on my left shows the nation's progress in terms of actual fatalities and the fatality rate for 100 million vehicle miles.

It continues existing grant programs to support highway safety activities. With a particular focus on combating drunk driving, we provide new safety bonuses for states that succeed in reducing fatalities or have high levels of seatbelt use, good emergency planning programs and other proven lifesaving programs.

It requires at least 10 percent of highway construction to be safety related. It provides also a needed authority to assure drug testing in the transit industry -- a hole in our drug testing program within safety-related jobs in transportation. While safety remains DOT's top priority, the new legislation's overriding purpose, of course, is to invest in America's future.

Our bill is a comprehensive proposal to restore and improve our deteriorating infrastructure so that America can stay competitive in global economy in the 21st century.

Stakes for the U.S. economy are high. Transportation accounts for 17 percent of our Gross National Product -- 17 percent. The highway construction will create jobs that will boost the economy. Every billion dollars of investment in infrastructure creates 30,000 to 50,000 jobs.

Designation of the new National Highway System reflects major demographic and travel changes in recent years. It incorporates up to 150,000 miles including the existing interstate system. The new National Highway System will serve major population centers, ports, airports, international border crossings, and interstate and inter-regional travel. And it will cooperate and allow cooperation at a very high level with state and local officials on route designations. Route designations now will take place on a

MORE

joint basis, rather than being mandated by one group or another.

The new authorization calls for uniformity of state truck registration and fuel tax reporting requirements -- reforms that will spur productivity.

If you talk to people who operate in interstate commerce, the major trucking companies in our deregulated system, you will find that to a person they complain about the bureaucracy and the paperwork that's necessary as they travel from state to state. The same information is required in different formats and the billions of dollars that are spent over the last several years to prepare paperwork which really provides the same information in a different form. Therefore, reforms are absolutely essential. And this legislation will relieve many of the inefficient and very expensive paperwork and economic regulation that exists. It will take the burden off of interstate trucking that's being placed there by what are really ancient rules and regulations that have no place in a modern society.

Transportation of the future, as I've indicated, will rely on -- to a much higher degree -- on advanced technology and intermodalism. The photo on my right shows the advanced BART System in the Bay Area, and the photo on the left shows intermodalism right here in the District of Columbia area, where we have basically Metro, I-66, and the Key Bridge all working together to get commuters downtown. These photos illustrate our increasing reliance on the private sector.

In Chicago, my hometown, the private sector is very, very involved in a new circulator system for the city of Chicago and the downtown area. A new district is being established. The private sector will play a very substantial role in funding that project, and I would point out a good portion of that funding, a vast majority of that funding will come from the private sector as well as state and local government, because the needs that are being met there are state and local needs which have great economic impact.

That shows, I think, the kind of creativity that can exist even in these times, and that's why we think this flexibility is so important, and that's why we have found ways in the bill to encourage private sector involvement.

That's why leveraging investment at the state and local level, as well as within the private sector, makes the money that the federal government invests in infrastructure go that much farther. It also, of course, as part of this legislation, will make federal assistance available for public and private toll roads. To allow those areas that want to build toll roads, that have the market to justify toll roads to mix interstate as well as other funds in the national highway system with a toll road concept.

To encourage investment in the future, the 1992 DOT budget includes \$104 million for highway research and technology deployment. That compares to \$49 million in 1991.

We're submitting a good bill -- a bill that has been developed over the last year and a half after consultation with many of you in this room. It's a bill that we believe is balanced, comprehensive and tailored to the needs of growing America. It has really been developed and changed almost until the day it was announced as a result of input provided by you and by many others throughout this country. We believe this agenda will receive broad support from the Hill. We believe this bill is something that -- the principles contained in this bill are principles that Republicans and Democrats alike in both the House and the Senate can support.

The President has said the priority investments embodied in this budget will help America prepare for the requirements and opportunities presented by a rapidly changing world. You've also

MORE

heard the President refer to a blueprint for a new highway system in his State of the Union address. We made a blueprint of the system and I thought I'd bring it along today. This map gives you a sense of what the new system might look like once we finish consulting with state and local governments. And, of course, it does not reflect all of the mass transit programs all over the country. This map is extensive, and I would suggest that this is a preliminary map that has not been before the Congress and it has not past the muster of full and complete public analysis.

This does represent not only input from the Department of Transportation, but also from many organizations represented in this room, from highway officials all over this country. It represents the new National Highway System. As you can see in blue, the current interstate highway system and then the National Highway System blueprint in red superimposed.

In many cases, it relies on existing right-of-ways and highways and provides for these systems to be integrated into the new National Highway System and to allow funding to be provided. It also takes into consideration many of the needs as they relate to mass transportation. And, of course, this is a program that won't be done overnight; this is really the beginning or the follow-on phase of the interstate highway system -- the new National Highway System.

Q Secretary Skinner, the red lines, the new ones, are of a different thickness. Does that indicate a different --

SECRETARY SKINNER: No. I think it indicates that if we thicken those lines, we wouldn't be able to see, even if we were close to where you live. (Laughter.) There is so much in the East, you see, that they -- but, no, it means nothing other than it is easier to do because of the link in the East and because of the number of existing facilities.

That is a question that I'm glad that you asked because otherwise it would appear that the East is being short-changed with less-calibre roads. (Laughter.) The National Highway System standards are national standards and we would hope --

This concludes my remarks. Thank you.

END

10:28 A.M. EST

THE WHITE HOUSE
Office of the Press Secretary

For Immediate Release

February 13, 1991

FACT SHEET

THE SURFACE TRANSPORTATION ASSISTANCE ACT OF 1991

President Bush today announced transmittal to Congress of the Administration's Surface Transportation Assistance Act of 1991. The bill reflects the President's determination to strengthen significantly the nation's surface transportation infrastructure by increasing the federal investment in transportation and building a stronger partnership with the states.

The Administration's bill proposes a \$105.4 billion investment over the next five years in highways, mass transit and highway safety programs. The proposal represents a new vision for surface transportation to meet the needs of an increasingly mobile society.

GOALS OF THE BILL

The bill is an important part of what the President described in his State of the Union address as "a forward-looking plan of action" to provide "long-term investments for the next American century." It implements basic goals outlined by Transportation Secretary Samuel Skinner and the Administration's National Transportation Policy, released in March 1990. The bill would:

1. Increase infrastructure investment. A strong surface transportation system is critical to ensuring the mobility of our nation and the competitiveness of our economy. The bill proposes to increase spending on highways from \$14.6 billion in FY 1991 to \$20.3 billion in FY 1996 -- a 39 percent increase over the next five years. Mass transit capital funding will increase by 25 percent to \$2.9 billion. The bill also contains new incentives for private sector investment in toll roads.
2. Restructure the federal highway system. The 43,000 mile Interstate Highway System has united America and stimulated our nation's growth. Now that the system is over 99 percent complete, the President is proposing a new 150,000 mile National Highway System. This system will include the present Interstate System and other roads of national significance. In addition, the proposal consolidates

several present funding categories into the new Urban and Rural Program. The present Bridge Program will be retained with substantially increased funding. This new structure will improve program efficiency and better focus federal funds on our nation's most important highways.

3. Provide greater flexibility to states and local governments. The proposal strengthens the federal, state and local partnership. States and local governments will have far greater discretion in selecting projects for funding and will participate in designating the new National Highway System. They will, for the first time, have broad flexibility to use funds for either highways or mass transit. New requirements for modern management systems and performance-based accountability at the state and local level will ensure cost-effective management of our transportation resources.
4. Assure a safe and efficient system. For the transportation system to serve the needs of America, it must be safe and efficient. The President's proposal meets both needs. The proposal increases funding for highway safety by 34 percent over the next five years, and provides incentives for states to adopt tough anti-drunk driving measures and promote increased seat belt use. The proposal will also call for the elimination of duplicative and costly state regulations governing the rates and services of interstate motor carriers.

The President's bill is divided into three main parts: the Federal-aid Highway Program, the Mass Transit Program and the Highway Safety Program. These three programs are described below.

THE MAJOR PROGRAMS

I. THE FEDERAL-AID HIGHWAY PROGRAM

The bill proposes to invest \$87.7 billion in highways over the next five years. It restructures the federal highway system into three main components:

- o The new National Highway System will encompass some 150,000 miles, including the existing Interstate System and other principal arterial routes. Funding for the National Highway System (NHS) will increase from \$7.7 billion in 1992 to \$11.2 billion in 1996.

The NHS will reflect the major demographic and travel changes that have occurred since the Interstate routes were designated. It will be an interconnected system of

principal arterial routes serving major population centers, rural areas, ports, airports and international border crossings. Designation of the routes will be made through consultation with state and local government officials. The federal matching share will be 75 percent, except for repairing or improving the operation of Interstate highways, which will be at 90 percent.

- o The new Urban and Rural Program will consolidate several existing programs and provide funding for approximately 700,000 miles of non-local roads. Funding for the program will be increased from \$3.9 billion in 1992 to \$5.7 billion in 1996. States will have greater flexibility in selecting projects for funding within this program and may use federal funds for either highway or mass transit capital projects. The federal matching share will be 60 percent.
- o The Bridge Program will provide funding for the rehabilitation and replacement of existing bridges. Funding will increase by 50 percent, going from \$1.8 billion in 1992 to \$2.8 billion in 1996. The federal matching share will be 75 percent.

In addition, the proposal will remove the restriction on the use of federal funds for the construction and improvement of toll roads and will encourage private participation in the construction and management of toll roads. The federal share for toll projects will be up to 35 percent. To reduce traffic congestion and improve air quality, the Secretary of Transportation may permit, on an experimental basis, large cities with serious air quality problems to impose rush hour fees on drivers.

The bill also contains proposals to encourage new technologies including:

- state of the art toll collection systems, which can electronically "read" a car and register a toll charge without requiring the car to stop; and

- intelligent vehicle highway systems, often referred to as "smart cars" and "smart highways," which integrate the vehicle, the driver, and the highway through electronic warning and vehicle/traffic control systems.

II. THE MASS TRANSIT PROGRAM

The mass transit program consists of two major components: a formula program that provides grants to transit systems and a discretionary program that assists with major construction projects. The discretionary program will include the most cost

effective new construction projects, funding for innovative approaches to solving transportation problems and activities addressing the needs of users with disabilities.

The entire mass transit program will be funded from the Mass Transit Account of the Highway Trust Fund. This will more equitably distribute user fee revenues and will provide state and local decision-makers with a more predictable and stable federal funding source.

The bill proposes a shift in federal support, from operating subsidies to more capital spending. The bill also encourages maintenance of existing transit fleets.

Consistent with the Administration's commitment to research and new technology, the bill provides for increased and flexible funding for research and proposes a new and expanded partnership with the transit community to foster innovative solutions to transit problems.

The proposed five-year funding for mass transit programs totals \$16.3 billion. The federal matching share is 60 percent for the formula grant program, 50 percent for the discretionary program and 75 percent for planning grants.

III. HIGHWAY SAFETY PROGRAMS

The bill places an increased emphasis on safety. Funding for highway safety programs financed by the Federal Highway Administration (FHWA) and the National Highway Traffic Safety Administration (NHTSA) will be increased from \$355 million in 1991 to \$436 million in 1992 and to \$476 million in 1996. Five-year funding for highway safety programs will total \$2.3 billion.

These programs consist primarily of grants to the states in support of safety initiatives. All NHTSA programs will be funded from the Highway Account of the Highway Trust Fund. NHTSA's current highway safety grant program will continue, with the federal share at 60 percent. Safety bonuses from existing NHTSA and FHWA programs will be provided to states that satisfy certain criteria relating to their highway safety programs, especially an aggressive effort to remove drunk drivers from our highways.

#



THE SECRETARY OF TRANSPORTATION

WASHINGTON, D.C. 20590

October 24, 1990

The Honorable Mark O. Hatfield
Ranking Minority Member
Committee on Appropriations
United States Senate
Washington, D.C. 20510

Dear Mark:

As you know, the language you included in the FY 1990 and FY 1991 Transportation and Related Agencies Appropriations Bills and their related Committee and Conference Reports, seeks to establish the Congressional intent to provide the maximum federal funding for the Westside Light Rail project from downtown Portland, Oregon to Hillsboro, Oregon under 49 U.S.C. 1603 (a), and the methodology to do so. These provisions set forth a maximum federal share of 75%, and a 25% local share. This letter expresses the commitment of the Department to fully comply with any applicable congressional directives in this regard subject to applicable federal requirements.

This commitment is conditioned, however, upon your continued support in the Appropriations Committee and the State and region's ability to commit the 25% local share of funding prior to executing the Full Funding Agreement. Based on the current financing plan, this means that the regional general obligation bonds must pass and the State Legislature must approve its share of the project funding.

I look forward to working with you on this important project.

Sincerely,


Samuel K. Skinner

United States Senate

COMMITTEE ON APPROPRIATIONS

WASHINGTON, DC 20510-4028

October 22, 1990

ACTION

is assigned to

UNIT 1

CONTROL NO

901022-055

SIMS

S-10

ROBERT S. BYRD, WEST VIRGINIA, CHAIRMAN

DANIEL K. MOYER, KANSAS

BRADY A. BENTLEY, SOUTH CAROLINA

J. BARNETT JOHNSON, LOUISIANA

QUENTIN N. BURRIS, NORTH DAKOTA

PATRICK J. LEAHY, VERMONT

JOHN BAKER, TENNESSEE

OSCAR D. ROBERTSON, KENTUCKY

DALE BUMPUS, MISSISSIPPI

DAVID M. DUNN, NEW JERSEY

MARK A. TALTON, NEW JERSEY

BARBARA A. MURKIN, MARYLAND

MARY RICH, NEVADA

ERICK ABRAHAM, WASHINGTON

WYOMING POWELL, JR., GEORGIA

J. ROBERT WYNN, MISSISSIPPI

JAMES H. HODGINS, STAFF DIRECTOR

J. KEITH KENNEDY, MINORITY STAFF DIRECTOR

PHIL GRAMM, TEXAS

SON MOULTON, OREGON

CHARLES E. SCHWABER, IOWA

DAVE Y. DODD, NEW MEXICO

ALAN B. SPOTTS, PENNSYLVANIA

WALTER H. RUDIN, NEW HAMPSHIRE

ALBERT W. BARTON, NEW YORK

ROBERT W. MATHEN, WISCONSIN

THOMAS DOUGLAS, MISSISSIPPI

JAMES BAKER, UTAH

JAMES A. HANCOCK, IDAHO

MARK O. HATHFIELD, OREGON

THE STEVEN, ALABAMA

The Honorable Samuel Skinner
Secretary
U.S. Department of Transportation
400 Seventh Street, S.W.
Washington, D.C. 20590

Dear Mr. Secretary:

For my meeting at the White House with the President and Governor Sununu on Friday, enclosed is a draft letter for your signature regarding the agreement on the Westside Light Rail project. While I understand that your schedule is busy, the President mentioned that you might be able to personally deliver the letter to Oregon later this month. Your presence at the announcement in Portland on behalf of the President and the Department would lend considerable support to the project.

I look forward to our continuing dialogue on this project. Please let me know as soon as possible if you have any questions regarding the draft letter, or your trip to Oregon.

Warm personal regards,

Sincerely,



Mark O. Hatfield
United States Senator

October 22, 1990

The Honorable Mark O. Hatfield
Ranking Minority Member
Committee on Appropriations
United States Senate
Washington, D.C. 20510

Dear Mark:

As you know, the language you included in the FY 1990 and FY 1991 Transportation and Related Agencies Appropriations Bills and their related Committee and Conference Reports, established the Congressional intent to provide the maximum federal funding for the Westside Light Rail project from downtown Portland, Oregon to Hillsboro, Oregon under 49 U.S.C. 1603 (a), and the methodology to do so. This law sets forth a maximum federal share of 75%, and a 25% local share. This letter expresses the commitment of the Department to fully comply with these congressional directives.

This commitment is conditioned, however, upon your continued support in the Appropriations Committee and the State and region's ability to commit the 25% local share of funding prior to executing the Full Funding Agreement. Based on the current financing plan, this means that the regional general obligation bonds must pass and the State Legislature must approve its share of the project funding.

I look forward to working with you on this important project.

Sincerely,

Samuel Skinner
Secretary
U.S. Department of Transportation

10/22/90

ISSUE: Rail Transit Issues in Portland, Oregon

BACKGROUND: The Banfield Light Rail Project in Portland, popularly known as "MAX," is a 15-mile light rail line between the eastern suburb of Gresham and downtown Portland. The project, which was funded with an Urban Mass Transportation Administration (UMTA) investment of \$240 million and which opened in 1986, is locally regarded as a great success, in spite of the fact that it is carrying half the riders originally estimated, and capital and operating costs are about 50% over original estimates.

WESTSIDE LIGHT RAIL LINE: This is a proposed 12-mile extension of the existing "MAX" line from downtown Portland to 185th Avenue (see map). Capital costs are estimated to be \$500 million. Congressional report language directs UMTA to enter into a full funding contract with a 75% Federal share by September 30, 1991. The direction on Federal share is in anticipation of a new reauthorization bill and is meant to grandfather the project from a possible change in the local match requirement. However, since Congress has not backed this direction with earmarked funds for the Federal share, a full funding contract for Westside depends upon reauthorization of the Federal transit program.

Tri-Met (the local transit agency) must finish preliminary engineering (the third step in UMTA's four-step project development process) and a final environmental impact statement before a full funding contract could be signed. Tri-Met hopes to do so by September 1991. UMTA considers the schedule optimistic, but is trying to be helpful by expediting reviews of Tri-Met's work products. A Supplemental Draft Environmental Impact Statement (SDEIS) is now being prepared. A series of technical issues has hindered the preparation of the SDEIS, but these now appear to have been fully resolved.

UMTA does not consider the project to be cost-effective. The cost per new rider is in the \$15 range compared with UMTA's threshold of \$6. Moreover, Tri-Met does not presently have the local match to build the project or the operating funds to run it. A bond measure on the November ballot, if passed, would provide part of the local match. Additional capital funding is proposed to come from the State and affected local jurisdictions, but specific funding sources are not yet in place. A funding source for the line's operating deficit has not yet been identified. To be eligible for UMTA capital funding, Tri-Met must demonstrate that it has the financial capacity to build and operate the project.

WESTSIDE EXTENSION FROM 185TH TO HILLSBORO: This is a proposed 6-mile extension of the Westside project. Costs are currently estimated at \$100 to \$150 million. The corridor failed to meet UMTA threshold test for alternatives analysis (the second step in the four-step process). In view of Congressional direction to advance the project, however, UMTA concurred in the initiation of alternatives analysis last April and approved a grant to fund the analysis work. The study is still at a relatively early stage and probably will not be completed before next summer at the earliest.



153304

THE HOUSE WEDNESDAY GROUP

CONGRESS OF THE UNITED STATES

386 House Office Building Annex II, Washington, D.C. 20515

202-226-3236

May 2, 1990

Governor John H. Sununu
Chief of Staff
Executive Office of the President
1600 Pennsylvania Avenue, NW
Washington, DC 20500

ep
(JHS note)

Dear John,

I would like to bring your attention to a new Wednesday Group report, "Highway Policy at a Crossroads." The report summarizes a number of recent infrastructure studies, looking at ways to meet national infrastructure needs without simply raising federal spending. A narrow focus on spending levels, the report argues, obscures other policy options deserving of attention.

This report, a copy of which is enclosed, is the first product of an on-going Wednesday Group project on infrastructure. The next report, which shares many of the themes in the Administration's recently-announced transportation strategy, is expected to be released later this spring.

Now in draft form, the forthcoming report begins by arguing that infrastructure is a manageable problem, not a looming crisis. The report continues with an examination of the incentives surrounding state and local decisions to invest in infrastructure. It argues that current federal policy encourages state and local governments to spend on activities and projects that often fail to serve national interests. The paper recommends that Congress and the Administration change "the rules of the game" so that federal aid results in state and local investments that do serve national objectives.

Since the Administration's transportation policy and the forthcoming Wednesday Group report seem to be largely in harmony, the Group is meeting with Administration officials to discuss ways to translate general policy themes into specific legislative proposals, particularly for the highway program. To date, Wednesday Group staff members have met with Michael Klausner and Todd Buchholz in the White House.

We will keep you informed as our work progresses. At some point it may be helpful for us to meet to discuss this issue. We look forward to hearing from you.

Sincerely,

Bill Gradison
Chairman



THE HOUSE WEDNESDAY GROUP
CONGRESS OF THE UNITED STATES

386 House Office Building Annex II, Washington, D.C. 20515

202-226-3236

HIGHWAY POLICY AT A CROSSROADS

Options for
U.S. Highway and Infrastructure Policy
in the Post-Interstate Era

April 20, 1990

CONTENTS

Executive Summary	i
Introduction	1
Background	3
Defining The Federal Role	5
State Versus Federal Responsibilities	5
The Federal Role in Highways: Options	6
Withdrawal	6
Partial Withdrawal	7
Modified Status Quo	7
System Expansion	8
Assessing Needs and Priorities	9
Traditional Ways of Estimating Needs	9
Needs Studies	9
Comparisons Across Time	10
Anecdotal Evidence	11
Willingness to Pay	13
Establishing Priorities	13
Performance Criteria	13
Rate-of-Return Analysis	15
Capital Budgeting	16
Financing Infrastructure Investment	17
User Fees	17
Federal Grant Structure	19
Cost-Sharing Ratios	19
Increasing Local Discretion	19
The Municipal Bond Market	23
Privatization	24
Accelerating Technological Innovation	27
Promising Applications	27
Barriers to Innovation	28
Promoting Innovation	29
Conclusion	33

FEATURES

Public Investment and Economic Growth: A Debate	12
Capital Budgeting: A Capital Idea?	14
The Highway Trust Fund: Wednesday Group Members Square Off	20

Executive Summary

INTRODUCTION **New Approaches to Providing Infrastructure**

This Wednesday Group report summarizes a number of recent infrastructure studies, highlighting policy options for improving federal public works programs, particularly the highway program. These policy options deserve attention for two main reasons. First, the completion of interstate construction will soon leave the federal role in national highway policy an open question. Second, the current budget situation makes it unlikely that the nation can rely solely upon increased spending to meet its infrastructure needs. Future policies will have to consider new ways of: defining the federal role; assessing needs and priorities; financing infrastructure investment; and accelerating technological innovation. The policies reviewed in this report aim to increase the benefits that the nation obtains from its infrastructure facilities and investments.

SECTION I **Defining the Federal Role**

With over 38,000 government entities involved in building and maintaining highways, the question of who should be responsible for what will always be a matter of some contention. Today, however, the federal government is on the verge of completing interstate construction, and the question of highway responsibilities has become a leading issue. For, as soon as interstate construction ends, the federal highway program will lose its long-time mission. A new rationale for federal highway policies will have to emerge. Congress and the Administration will develop this new mission and rationale during reauthorization of the highway bill. Several broad possibilities stand out.

- o *The federal government could substantially withdraw from highway activities, leaving most responsibility for maintaining and expanding the highway system to the states.* To a great extent, this proposal rests on the finding that federal aid often leads to state and local policies that neither use resources efficiently nor serve national interests. Reducing federal transfers, it is said, would force recipient governments to scrutinize their resources and budget priorities more carefully than they do at present. According to this argument, lower capital investment at the federal level would not necessarily result in lower capital investment by all governments combined. Opponents of withdrawal argue that a high-quality national road system may require continued federal involvement because states and localities would otherwise respond to regional, not national, priorities in setting their highway policies.

- o *The federal government could partially withdraw from highway activities, confining its duties to maintaining and perhaps widening "routes of national significance" -- mainly the interstates.* Since the routes of national significance are already in place, this redefinition of responsibilities would change the activities required of the federal government. Instead of focusing on *construction*, as it has in the past, the government would concentrate on *maintenance*. Responsibilities relinquished at the federal level would become state and local obligations. The goal would be to ensure that existing national roads remain a safe, efficient means of transportation -- which they might not, according to some analysts, in the case of a major federal withdrawal.
- o *The federal government could modify its role in certain areas of infrastructure policy in order to obtain better results from public works spending and facilities.* The federal role in public works financing, for example, could be changed to enhance the efficiency and flexibility of national infrastructure policy. Likewise, the federal role in promoting technological innovation could be modified to improve the effectiveness of infrastructure investment. Sections III and IV of this report discuss these options.
- o *The federal government could build an entirely new system of highways that would supplement the current network based on the interstates.* This proposal would keep federal highway authorities focused on construction, rather than maintenance, of the national road system.

SECTION II

Assessing Needs and Priorities

As one step toward improving the adequacy of the nation's infrastructure, the government could refine the methods by which it assesses needs and priorities. Different methods, of course, result in different estimates of need. The more detailed and accurate the assessments are, the more effectively elected officials can determine what kind of infrastructure activities the government should fund, and the more judiciously they can weigh public works spending against other claims on the public purse.

- o *At present, "needs studies" dominate thinking about how much the nation must spend on infrastructure.* These studies typically posit an ideal standard of condition that a class of facilities (highways, for example) should meet. The level of need is the estimated cost of bringing actual facility conditions up to that standard. Traditional needs studies have been sharply criticized, however, for exaggerating the amount of infrastructure investment the economy requires and for failing to prioritize needs.
- o *An alternative to traditional needs studies, which measure facility condition, would be assessments that measure facility and system performance-- "performance" meaning the benefits that a structure or class of structures renders to its users.* The emphasis on facility performance instead of condition is critical. Public works, after all, are built to provide services, not to stand as monuments. Performance-based needs studies have indicated that the nation's infrastructure problems are much more tractable than is commonly thought.

- o *Some reports recommend a federal capital budget to help the government establish spending priorities.* A capital budget, which separates capital spending from operating expenditures, would highlight infrastructure needs and resources within the federal budget. It would thereby enable public works programs to compete more effectively against other programs for scarce spending resources than is now the case.

SECTION III Financing Infrastructure Investment

Financing policy refers to the way that the government collects and disburses public works money. These policies create incentives that strongly influence the use, construction, operation, and maintenance of public works facilities. When the federal government changes these incentives, it changes the efficiency and flexibility of infrastructure policy, largely through effects on state and local investment decisions. Thus, financing policy affects the willingness and ability of different levels of government to raise public works revenues and spend them efficiently.

- o *Pricing policy, which regulates consumption of infrastructure services, could increase the levying of user fees -- charges on the people who benefit from public works.* The principle is that people should pay for the costs of the facilities they use. In practice, user fees can prevent public works from becoming over-used. They can also establish a steady revenue stream for financing maintenance. The federal highway program employs user fees (the gas tax, for example) extensively, but there are questions as to whether truckers pay their fair share for the road system and whether congestion pricing should be adopted to reduce traffic volumes at peak times and places.
- o *The federal grant structure, which determines how the government disburses money, often leads to state and local investment decisions that do not serve national interests.* First, say the critics, current policy allows state and local governments to finance projects of primarily local benefit at federal expense. Second, current policy is not flexible enough to meet diverse needs across the country. The critics argue that to rectify these problems, federal policy should foster greater local scrutiny of proposed projects. In addition, federal policy should place more accountability for infrastructure spending decisions on the shoulders of local officials. This could be accomplished by giving these officials greater discretion in allocating federal aid. As mentioned above, adoption of such proposals would represent a change in the federal role in financing infrastructure.
- o *Since federal tax policy affects whether state and local governments can issue bonds to raise infrastructure money, Congress should be attentive to how the tax code influences the municipal bond market.* There is a controversy as to whether the Tax Reform Act of 1986 injured state and local access to bond markets by restricting the purposes for which tax-exempt bonds could be issued.
- o *Privatization has emerged as a way for states to build facilities, particularly highways, that they do not have the money to build themselves.* Under privatization, states enlist private firms to build and manage different projects, with ownership usually reverting to the state after a certain length of time, such as thirty years.

SECTION IV Accelerating Technological Innovation

Literally and figuratively, new technologies can stretch the mileage that the public gets from each dollar it spends on infrastructure. Just as important, new technologies can lead to alternative ways of delivering traditional infrastructure services. Building more highways for individual commuters simply may not be the best way to help workers reach their jobs. Instead, the nation may have to look toward technologies such as telecommunications, which can allow people to work at home, as substitutes for traditional transportation infrastructure. Technology can enable the country to do things in entirely new ways -- not merely to do things in old ways, only more efficiently.

- o *One obvious way to accelerate infrastructure research and development (R&D) would be to increase spending.* Several studies endorse this proposal, pointing to the low level of current R&D expenditures as justification. A significant move into infrastructure R&D would represent a change in the federal role in national infrastructure policy.
- o *Several studies recommend the creation of a federally-funded institution to conduct, coordinate, and disseminate infrastructure R&D.* This recommendation is based on the findings that the private construction industry consists of firms that are too small to finance infrastructure R&D, and that public transportation authorities are too fragmented to build upon and complement each other's work. In addition, some people argue that R&D efforts ought to be concentrated in universities rather than in government agencies.
- o *Federal regulations, like the tax laws mentioned above, sometimes interfere with the ability of localities to build the infrastructure they need.* Several studies argue that national policy makers should try to prevent safety regulations from 1) impeding adoption of new technologies, and 2) causing construction of structures ill-suited to local needs and conditions. The government could also consider ways to protect firms that adopt promising materials and techniques from exposure to liability.
- o *The federal government could change investment policy (highway construction specifications) to make road surfaces more durable and therefore more cost effective.* Thicker roads would be more expensive to build, but they would reduce maintenance and user costs enough to result in overall savings.
- o *Another option for accelerating innovation would be to enhance efforts to recruit, train, and retain a sufficient number of talented civil engineers to meet national needs.* Several studies have predicted that a shortage of civil engineers could become a serious problem.

INTRODUCTION
New Approaches to Providing Infrastructure

"The third and last duty of the sovereign or commonwealth is that of erecting and maintaining...public works." -- Adam Smith¹

In 1956, President Eisenhower and the 84th Congress initiated construction of the interstate highway system. The effort to realize their vision of a national road network has sustained federal highway policy ever since. In 1991, however, road workers are expected to lay the last miles of the system, ending the era when interstate construction was the guiding mission of federal highway policy.

Congressional hearings to define a new mission for federal road policy have already begun. These hearings are the first step in a process that will lead to reauthorization of the highway program beyond September, 1991, when the current authorization expires. Since the reauthorization could establish federal road priorities for decades to come, it might be the most significant piece of highway legislation since the milestone bill of 1956. The reauthorization is additionally important because it comes at a time of fiscal stringency, in which policy makers must find cost-effective ways to meet the nation's growing demand for infrastructure services. To the extent that the highway bill incorporates cost-saving reforms, it could serve as a model for improving the way that the government runs its infrastructure programs.²

Many articles and studies have concluded that the U.S. is on the verge of an "infrastructure crisis" -- that is, a period of deteriorating public safety, stagnant economic growth, and declining living standards brought on by crumbling bridges and leaky pipes, among other things. Some analysts say that to avoid such a crisis, the country will have to invest nearly \$3 trillion through the end of the century in maintaining, replacing, and expanding its infrastructure -- equivalent to about 60 percent of current annual gross national product (GNP) and almost triple what will be invested by that time at current spending rates. Other studies have questioned whether America's infrastructure problems are so acute.

This Wednesday Group report assumes that strategies for supplying the nation with infrastructure cannot rely on increased spending alone. Excessive attention to spending levels, which has been a characteristic of debates on infrastructure policy, obscures other options for meeting national needs. This report summarizes a number of such options, arranging them as they apply to four issues: defining the federal role, assessing needs and priorities, financing infrastructure investment, and accelerating technological innovation. The report highlights but does not endorse these options, which could enhance the amount and quality of the services the nation obtains from its public works investments. The proposals have been drawn from a number of recent studies on how to assess and solve the nation's infrastructure problems.

BACKGROUND
The Federal Highway Program

"America's road system is one of the world's most impressive public investments."³

Modern federal highway policy has its antecedents in legislation passed in 1916. Since that time, federal highway outlays have totaled about \$400 billion (in 1982 dollars), or 40 percent of the \$1 trillion that the nation has invested in highways this century. Annual spending is about \$14 billion. The national highway network is worth about \$500 billion and accounts for half of the nation's total infrastructure assets.⁴ A recent General Accounting Office (GAO) report describes the federal program:

"The core of the federal highway program is the federal-aid highway system. Although the federal-aid system consists of only 22 percent of total [U.S. road] mileage, or about 843,000 miles, it handles approximately 80 percent of all travel in the nation. The system consists of four categories of designated routes: interstate, primary, secondary, and urban....

"The interstate system...connects, as directly as possible, the nation's principal metropolitan areas and industrial centers. It serves the national defense and connects with routes of continental importance at suitable border points....[The] primary highways are usually U.S.-numbered roads-- U.S. 1, for example -- and are similar in character to interstate routes....The secondary system...comprises rural routes that are classified as major collectors....[And the urban system] consists of...arterials and collectors in urban areas....

"Designating a highway as part of the federal-aid system does not mean that it is owned, operated, or maintained by the federal government. It simply indicates the eligibility of state and local road systems for federal assistance....The interstate system consists of 43,593 miles and receives the most federal funding. Interstate highways account for only 1 percent of the nation's total miles of roadway, but they carry about 21 percent of the total vehicle miles of travel....

"The federal-aid highway program is financed through the highway trust fund, established by the Highway Revenue Act of 1956. Revenues from taxes accrue to the fund and are dedicated to use on federal-aid roads. Because the Congress did not enact the highway trust fund permanently, it must be extended periodically to continue."⁵

SECTION I

Defining The Federal Role

*"Current highway policy...appears to lack clear objectives and rationale."*⁶

*"Federal and state statutes should be far clearer and more rigorous in specifying who is responsible for doing what and by what deadline."*⁷

Historically, the federal role in highway policy has been to finance construction of and set standards for federal-aid roads, particularly the interstate system. The federal government has also had a lead role in highway safety, research, and planning. Until 1976, major maintenance was almost solely a state responsibility, but today the federal government devotes about 40 percent of its highway budget to repair and rehabilitation.⁸ Looking at the gradual federal move into maintenance, some analysts ask whether the federal role in national highway policy has become too diffuse. Anticipating completion of the interstate system, other analysts ask whether federal responsibilities should change in coming years. Answers to these questions will be given during reauthorization of the highway program. Conceivably, the federal government could emerge with a dramatically transformed role in national highway policy.

Defining Roles: State Versus Federal Responsibilities

The congressionally-chartered National Council on Public Works Improvement (NCPWI), which issued a comprehensive account of infrastructure policies and problems, has identified numerous guidelines for judging whether an activity should, in theory, be a federal responsibility.⁹ For public works, there are three basic criteria:

First, projects of national scope and benefit require national coordination and financing. As the Congressional Budget Office (CBO) says, "Federal programs in highways, airports, air traffic control, and inland waterways were undertaken because no other jurisdiction could plan a system of such facilities from a national perspective."¹⁰ Without central coordination, different parts of an infrastructure system would in all probability lack structural consistency -- highways and bridges in Texas, for example, might be built to different standards than those in Pennsylvania. These inconsistencies would cause inefficiencies for users. In addition, states and localities, if left to themselves, might provide inadequate amounts of many kinds of infrastructure: "[When] a community receives only a fraction of the benefits from a facility, yet must pay all of the associated costs, it will have no incentive to provide what is most beneficial for the nation as a whole."¹¹

*Second, when the federal government passes regulations that require significant capital investment from the states and localities, and when the costs exceed the benefits to the area served, the federal government should help local communities meet the financial strain of compliance.*¹² When, for example, Congress raised clean water standards and required towns to build treatment plants, the Environmental Protection Agency provided grants to help finance their construction. According to some analysts, the principle of extending federal aid to help jurisdictions meet national objectives applies especially to states and localities that have limited fiscal resources.¹³

Third, the government uses infrastructure programs to achieve goals other than providing infrastructure services. Congress and the White House pass public works programs at least in part to create jobs (especially at times of high unemployment) and "to increase the mobility of the population and to integrate the various regions of the country."¹⁴ Infrastructure projects can also spur economic development, improving the welfare of regions that are lagging behind general economic growth and prosperity.

One reason for the highway program's historically strong popular support may be that interstate construction has fulfilled the above guidelines: building a continental road network required central coordination; the cost was too high for the states to bear unassisted; and there were several associated benefits (expanding travel and commercial opportunities as well as bolstering civil defense by establishing a means to move troops and evacuate cities) that had clear national value.

The Federal Role in Highways: Options

As mentioned, the completion of the interstate system and the movement of the central government into maintenance activities raise the question of federal responsibilities in national highway policy. *The studies reviewed for this report outline four broad directions (besides status quo) in which the federal role could evolve: major withdrawal, partial withdrawal, modified status quo, or system expansion.* Each possibility is discussed below.

Withdrawal. The federal government could relinquish many of its highway responsibilities, leaving maintenance and expansion of national roads to the states and localities. To a great extent, this proposal rests on the finding that federal aid often leads to state and local policies that neither use resources efficiently nor serve national interests. Reducing federal transfers, it is said, would force recipient governments to scrutinize their resources and budget priorities more carefully than they do at present. According to this argument, lower capital investment at the federal level would not necessarily result in lower capital investment by all governments combined.

The case for withdrawal rests largely on the finding that "federal aid no longer adds to states' spending on highway programs but only substitutes for state financing."¹⁵ This effect is known as "substitution" -- states and localities relying on federal money to pay for their basic infrastructure, thereby avoiding the need to go before their constituents with tax increases or bond referenda. With the federal government financing basic facilities, states and localities can use their resources to fund non-infrastructure priorities. Often, the decision is to fund "luxury infrastructure" such as sports stadiums, convention centers, and even student loans.¹⁶ This side-effect of intergovernmental transfers tends to serve parochial, rather than national, interests. It also leads to decisions to build projects with low economic returns.

If the federal government were to reduce its aid transfers, continues the substitution argument, the states and localities would pick up the slack either by raising revenues through taxes and bond issues or by dedicating larger portions of public budgets to basic infrastructure. Local fiscal responsibility would be enhanced through the necessity of making difficult budget choices. Thus, the overall effect of withdrawal might be that "states and local governments would face...pressure to raise taxes to finance projects now financed federally. In the long run, national infrastructure spending would probably change by much less than any federal cut."¹⁷

Other arguments for withdrawal are based on the principle that states and localities, not the federal government, are responsible for keeping roads in good shape. According to this view, "the shift of the federal program to major maintenance programs in the late 1970s is seen as an error. These programs resulted from the delayed completion of the interstate system; parts of the system had deteriorated before the remainder was finished."¹⁸ Federal financing of maintenance activities either "intrude[s] on state responsibilities or represent[s] state failures to meet their responsibilities."¹⁹ Further, the CBO reports that maintenance activities yield primarily local rather than national benefits. Thus, although inadequate maintenance is a growing problem, it is not necessarily, according to this argument, a federal concern -- nor was it intended to be when the modern highway program was authorized in 1956.²⁰

According to a similar argument, congestion, which is primarily a peak-period problem, is fundamentally a state or local responsibility because relieving it yields primarily local benefits. In addition, congestion is not a problem that besets all parts of the country. Some urban highways suffer from debilitating traffic, yet 85 percent of rural highway capacity is unused; nationally, 60 percent of urban network capacity goes unused. Severe congestion afflicts only nine states: Alabama, California, Connecticut, Georgia, Massachusetts, New Jersey, New York, Pennsylvania, and Texas.²¹ Since relieving congestion yields primarily local benefits and is not a pervasive national problem, it is not clear what, if any, responsibility the federal government has to relieve it.

Partial Withdrawal. As an alternative to a major withdrawal, some analysts suggest a federal withdrawal only from responsibility for certain parts of the federal-aid highway system. Under this plan, the government would restrict its interests to "routes of national significance" -- the interstates and possibly the primary system.²² Since these road systems are already in place, this redefinition of responsibilities would entail a transformation in the nature of the activities required of the federal government. Instead of focusing on *construction*, as it has in the past, the government would concentrate on *maintenance*. Federal aid to the secondary and urban systems would cease, as recommended in the Reagan Administration's New Federalism legislation of 1982 and 1983, so that the government would be responsible only for those roads that carry the bulk of national traffic. Activities and road systems relinquished at the federal level would become state and local obligations.²³

Modified Status Quo. A withdrawal of any kind might prove unacceptable, both for political and policy reasons. This does not, however, mean that the federal role in national highway policy should go unchanged. A new division of responsibilities might help the nation obtain more services than it currently does from its infrastructure investments, particularly at the federal level. A new division of these responsibilities might be desirable even in the case of partial federal withdrawal, described above.

There are several arguments in favor of continuing a strong federal role in national highway policy. First, "[a] real difficulty with a federal withdrawal is that state program priorities are not likely to match...national economic priorities."²⁴ A high-quality road system may require federal oversight and funding. Furthermore, if building a facility in the first place is in the national interest, then maintaining it is also in the national interest. Finally, if the backlog of unmet highway needs has grown too large for the states to handle unassisted, the federal government may have to assume responsibility for duties that might not normally or theoretically fall to it.

Financing policy is one area where the federal role could be modified to obtain better results from public works spending. Many analysts suggest, for example, that Congress and the Administration change the investment incentives that federal subsidies provide to state and local officials. By changing these incentives, federal policy makers could move their state and local counterparts toward budget decisions that responded to national needs. In part, this would be achieved by mitigating the substitution problem. Section III of this report describes some of the financing policies that would modify the federal role in order to enhance efficiency and flexibility in national infrastructure policy.

Infrastructure technology is another area where a change in the federal role could lead to better results from public works spending. Innovative technologies can dramatically increase the performance of infrastructure facilities and systems, thereby lessening the need to build costly new structures in response to growing needs. Advanced technologies can also provide alternative ways of delivering services--building highways, for example, is not the only way to enhance mobility. This subject is discussed in Section IV of this report.

System Expansion. A final option for the federal role would be to continue the emphasis on construction. The idea, as explained in some infrastructure studies, would be to have the government build "additional modern highways to access and supplement the basic interstate system....The need [is] for new, four-lane highways to link rural areas with commercial centers, and...new urban beltways, bypasses, or major arterials to serve massive suburban traffic growth."²⁵ If this proposal were adopted, it would provide a new mission to guide federal highway policy, just as interstate construction provided a mission in past years. This proposal would leave maintenance of the interstate system as the responsibility of state transportation budgets and agencies.

SECTION II

Assessing Needs and Priorities

"[The infrastructure] issue that is least tractable: how much must the nation invest each year in public works in order to 'sustain future economic growth?'"²⁶

The public infrastructure plays a vital role in supporting a healthy, growing economy. It affects public safety, productivity growth, living standards, and even how American companies fare in world markets. And although no one knows *how much* infrastructure the public should add to its stock each year to ensure continued economic prosperity, most analyses indicate that investment has persistently fallen short of what "ought" to be spent. How large has the shortfall been? As Table I on the next page shows, estimates vary markedly, depending on the method of assessment.

Most studies warn, however, that the country should not boost spending indiscriminately. Public officials should compare alternative investments against each other and against other public priorities. For this to occur, office holders require as accurate and detailed an assessment of needs as possible. The better the information, the higher will be the ultimate level and quality of infrastructure services that the nation obtains from its public works investments and facilities.

Traditional Ways of Estimating Needs: Needs Studies

There are many ways to gauge how much money the government should invest in infrastructure. Many spending estimates are based on "needs studies," which typically posit an ideal standard of condition that a class of facilities (highways, for example) should meet. The level of need is the estimated cost of bringing actual facility conditions up to that standard. Some needs studies simply tally up what it would cost to build all infrastructure projects that have been authorized for construction by various levels of government.

Despite their wide use, needs studies have received considerable criticism as a means of establishing spending policy. The main complaints are that such studies ignore limitations on government budgets and fail to prioritize among needs. They do not account for the changing needs of the economy, and they do not reflect the fact that technological innovations may increase the amount of services that facilities provide. Nor do needs studies consider whether alternative ways of delivering services are available. The latter shortcomings arise because traditional needs studies quantify the amount and condition of *physical facilities* rather than the level and quality of the *services* they provide. The emphasis should be on services because governments build public works to promote economic activity, not to construct monuments.

Table I: Comparison of Annual Capital Investment Requirements and Actual Capital Outlays (in billions of 1982 dollars).

<u>Infrastructure Category</u>	<u>AGC Study</u>	<u>NCPWI Study</u>	<u>JEC Study</u>	<u>CBO Study</u>	<u>Actual Outlay, 1985-86</u>
Highways and bridges	\$62.8	\$46.8	\$40.0	\$27.2	\$23.4
Other transportation (mass transit, airports, ports, locks, waterways)	17.5	16.0	9.9	11.1	8.0
Drinking Water	6.9	9.0	5.3	7.7	4.5
Wastewater treatment	<u>25.4</u>	<u>11.4</u>	<u>9.1</u>	<u>6.6</u>	<u>5.7</u>
TOTAL	\$112.6	\$83.2	\$64.3	\$52.6	\$41.6

Sponsor of Study and Methodology Employed

AGC: The Association of General Contractors -- Engineering Standards
NCPWI: The National Council on Public Works Improvement -- Methodology Unspecified
JEC: The Joint Economic Committee of Congress -- Facility Conditions
CBO: The Congressional Budget Office -- Cost-Benefit Analysis

Source: NCPWI, *Fragile Foundations*, February 1988.

As the NCPWI reports, "Although traditional data help officials maintain facilities in accordance with engineering standards, they offer little advice about service adequacy. They do not show whether more facilities are needed or if different facilities would be more effective. Traditional data alone are not adequate for setting spending priorities and exploring low-cost service delivery alternatives."²⁷

In sum, says another study, many needs studies "[have] been, and [continue] to be, very narrow and of limited usefulness in guiding resource allocation decisions at any level of government....The result of the traditional needs approach generally has been estimates of capital investment requirements far in excess of available resources or even the most optimistic projections of new revenue sources. As a result, many needs studies have been viewed as self-serving and lacking any real credibility."²⁸

Traditional Ways of Estimating Needs: Comparisons Across Time

Another popular method of measuring infrastructure needs is to compare current investment levels to past levels. Numerous studies, for example, judge current public infrastructure spending to be inadequate on the basis of its share of gross national product, which "dropped from 3.6 percent of the gross national product (GNP) in 1960 to 2.6 percent in 1985."²⁹ Other reports deem public capital investment insufficient on

the basis of infrastructure's share of total public spending, which shrank from 12.3 percent in 1960 to 6.8 percent in 1984. The implication is that the spending level and budget mix of 1960 (in this example) represent an ideal that the government should strive to recreate.

Past spending, however, does not necessarily indicate what should be spent today. If, for example, the government were locked into the budgets of 1960, public welfare/education spending would revert to 8.02 percent of GNP as opposed to 15.6 percent in 1984, and defense spending would be 9.19 percent of GNP as opposed to 6.65 percent in 1984 -- not necessarily a budget mix that policy makers would choose for 1991 or any other year.

As for the decline in infrastructure's share of total public spending since 1960, inadequate public works outlays may not be the cause. Several studies suggest that infrastructure's proportion of total public spending has fallen more because welfare/education spending has surged than because public works spending has lagged. As national priorities and needs change, so do funding levels.

The CBO cites yet other reasons for doubting whether infrastructure spending relative to GNP should be the same today as it was in previous decades. The economy has changed immensely over the years, with the service sector growing significantly in its share of GNP. Since "the service and financial sectors require fewer transportation services and generate less pollution (thus requiring less environmental infrastructure) than does the manufacturing sector," the country may require less public capital investment today than in past years.³⁰

In addition, "the optimal level of infrastructure investment relative to GNP will depend, in part, on the efficiency of infrastructure use."³¹ As will be shown below, financing policy, management techniques, and technology can all improve efficiency by raising the amount of services that a given set of facilities or a given amount of spending provides. Further, infrastructure programs are moving from an era of intensive construction to an era of conservation and maintenance. This evolution should diminish the amount of public capital investment that will be required in future years.³²

Finally, say other studies, some part of the decline in public works investment relative to GNP over time may be the result of public officials relying on private developers to provide facilities that have traditionally been paid for with public money.³³ The officials typically turn to private interests to build and operate infrastructure facilities (called "privatization," which is discussed below) or require developers to build basic facilities. The developers pass on their infrastructure costs in the prices of their projects. In both cases, the infrastructure is provided without raising taxes or appearing as a cost in public ledgers.

Traditional Ways of Estimating Needs: Anecdotal Evidence

Another common way of assessing needs is to look at deficiencies in a particular region or in a certain infrastructure mode (a "mode" is a category of infrastructure such as highways or wastewater treatment plants) and to conclude that problems are pandemic. This method often results in assessments imbued with "a distinct crisis orientation."³⁴ The early- and mid-eighties saw many reports that illustrate this approach, such as *America in Ruins*, which was one of the seminal works on infrastructure, and "The Decaying of America," a 1982 *Newsweek* cover story that begins by sketching a picture of massive public works failure in New York City.³⁵

Different Hilltops, Different Views

Different ways of looking at the nation's infrastructure yield different perspectives on the size of problems and the nature of policies to solve them. This page shows how two distinct approaches to assessing needs, one by David Aschauer of the Federal Reserve Bank of Chicago and one by the Congressional Budget Office, suggest divergent strategies for dealing with the nation's infrastructure problems.³⁶

Aschauer argues that investment in public facilities is crucial to productivity growth and economic expansion. The mechanism is the link between net public capital stocks (total infrastructure assets minus depreciation) and the return on private capital. The more public capital the economy has, the more profitable and productive a given amount of private capital will be. Similarly, the less the public invests in capital assets, the slower productivity growth will be. Aschauer ascribes fully 80 percent of the productivity slump from 1971 to 1985 to a slowdown in government investment. "Thus," writes Aschauer, "a root cause of the decline in the competitiveness of the United States in the international economy may be found in the low rate at which our country has chosen to add to its stock of highways, port facilities, airports, and other facilities which aid in the production and distribution of goods and services." Aschauer recommends up to a four-fold increase in national infrastructure spending.

A paper by CBO analysts asks, however, whether the link between public investment and productivity growth is as strong as Aschauer finds. The CBO paper points out that numerous factors other than public investment contribute to productivity. Because Aschauer's work does not account for these factors, it may overstate the impact of public investment on the economy.

Moreover, argues the CBO paper, Aschauer's narrow focus on aggregate investment trends offers little guidance for determining how much and where to spend on basic facilities. The analysis suggests that to solve problems, government need only do more of what it has done in the past, which is to construct new facilities. This view, however, overlooks the potential for technology to change both what the private sector requires and the public sector obtains from infrastructure investment. Such an outlook neglects to consider new and better ways to provide public works.

Instead of this approach, the CBO paper employs benefit-cost analysis to determine which investments offer the greatest opportunities for efficient use of public resources. Such an approach evaluates separately the return on individual projects or classes of projects. Total spending equals the sum of spending needed for each of the individual projects. Benefit-cost analysis indicates that substantial additions to the nation's net capital stock probably would not yield rates of return much higher than could be realized on private-sector investments. In addition, maintenance, not new construction, would yield the highest return on public investment.

Thus, whereas Aschauer's work suggests sizeable increases in spending, the CBO paper suggests only modest increases. And whereas Aschauer's work indicates a need for new construction, the CBO paper indicates a need for better maintenance and management of existing structures. The difference in outlooks is due to the choice of approaches to assessing needs. While Aschauer's research aims to demonstrate a connection between public investments and economic performance in the past, the CBO analysis attempts to show how public resources can be used more efficiently in the future. The CBO paper argues that only the latter approach ensures that public investment will contribute significantly to productivity and economic growth.

But as one report asks, "[Do] the disaster stories accurately reflect the condition of the tangled network of American highways, subways, airports, sewers, reservoirs, and landfills?"³⁷ According to this source and others, the answer seems to be no: "the flavor of crisis [has become] a bit dulled by increased attention to the shape of the specific tasks at hand."³⁸ And as one analyst says, facility conditions "[are] better than one might anticipate from the aggregate investment trends and far better than some of the apocalyptic estimates of capital needs would imply."³⁹

By some measures, America's public works are actually improving -- at least in a few areas. The cost of highway travel, for example, decreased by an estimated one percent from mid-1985 to mid-1987, and the condition of highway pavement surfaces improved significantly from 1975 to 1985.⁴⁰ Given the diversity of infrastructure facilities, programs, and problems, anecdotal and fragmentary evidence on infrastructure shortcomings must be used with care.

Estimating Needs: Willingness to Pay

In estimating needs, many studies ignore or discount the public's willingness to pay for infrastructure. But it is possible that the level of public investment "has been a deliberate budget choice exercised by public officials and by voters."⁴¹ The nation may be providing itself with precisely the amount of infrastructure it wants, given perceptions of need and alternative uses of public money. The level of infrastructure spending has, after all, always been cyclical, responding to changing political and economic conditions.⁴²

If the problem is one of perceptions and political will, and if more public works spending really is necessary, then the best policy may be to collect better information and communicate it to voters and elected officials.⁴³ The next section discusses how the federal government could improve its decision-making.

Estimating Needs: Establishing Priorities

As suggested above, traditional needs studies typically do not indicate where infrastructure priorities lie or what deficiencies may not be worth fixing. They simply indicate in aggregate terms how much the government *could* spend if it had limitless resources.

Performance Criteria. Several studies recommend basing investment decisions on criteria that indicate how facility performance would deteriorate or improve with varying levels and types of investment. The NCPWI says that such data "are necessary for gauging infrastructure needs more precisely, maintaining and expanding service capacity more effectively and efficiently, and supporting a growing and prospering economy."⁴⁴

With comprehensive information, policy makers and their constituents could weigh the benefits of alternative investment strategies against each other and against other public priorities: "Decision makers need to know the real impacts of varying levels of infrastructure investment before they can make meaningful judgments about the appropriate level of resources to devote to the very real and serious problems confronting the nation's public investment priorities. In short, for a definition of capital needs to be useful it must describe more than the total dollars required in a particular sector over some long time period."⁴⁵

The Wisconsin Department of Transportation, for example, has developed an innovative capital investment program that avoids basing spending decisions on a list of aggregate needs. Rather than checking off projects on a priority list until available funds are exhausted, the department collects comprehensive data on road conditions and performance, loads the data into a computer, and produces reports on the extent and severity of various deficiencies statewide, by district, and by type of roadway or bridge. These reports help guide development and evaluation of alternative investment strategies under a range of spending scenarios. This approach to capital investment "was developed to provide a realistic appraisal of what could and could not be accomplished with a number of different revenue levels to guide individual project selection."⁴⁶ It also generated political support to increase highway revenues -- the ostensible rationale for traditional needs studies.

A Capital Idea?

Some critics of the federal budget process argue that the federal budget obscures the true effect of Congress' spending decisions. It does so by lumping together two distinctly different types of outlays, those for capital items and those for operating expenditures. A capital budget, say these critics, would clarify the effects of spending policy and would lead to rational infrastructure investment decisions. Other analysts say that a capital budget would result mainly in excessive public works spending. This discussion presents the arguments on both sides of the issue.

But first, what is a capital budget? It is a budget that separates capital spending from operating or current spending. The rationale for the distinction is that capital spending is really an investment. It buys goods that have long lives and yield benefits over a number of years -- highways, for example. Current spending, on the other hand, purchases goods such as Social Security payments, which are completely consumed in a single year.

In addition to accounting for different types of *spending*, a capital budget accounts for different types of *financing*, through debt and through current revenues. Debt is often used to finance goods that yield their benefits over many years. Municipalities that plan to build highway projects often issue bonds, for example. The project's construction cost is recorded in the capital budget and is offset by receipts from the bond sale. Only the interest payments during the life of the bond appear in the operating budget. It is the operating budget, of course, that is financed through general revenues and pays for most state and local programs.

If devised in the proper way, a capital budget can do more than document what kind of purchases the government is making and how much debt it is issuing. A capital budget can become a management tool, establishing priorities and laying out the whole range of possible capital improvements. It can clarify the implications of competing spending choices, showing how different kinds and levels of investment would affect infrastructure conditions and performance.

Advocates of a federal capital budget argue that:

- o *A federal capital budget would focus Congress' attention on the nation's infrastructure needs.* By highlighting capital spending within the overall budget, a capital budget would mitigate the disadvantage that investment-type programs face in competing against popular social programs for limited fiscal resources. Capital

Modeling a federal program on the Wisconsin program would be difficult because of the quantity of information that would have to be collected and assimilated. But the National Research Council (NRC) believes that it could be done: "With [improved] information systems, we can for the first time accurately account for the huge inventory of highways, roads, and bridges...and significantly improve their management."⁴⁷

Rate-of-Return Analysis. The CBO and NCPWI describe how rate-of-return analyses could be used to determine needs and guide investment decisions. These types of analyses, although different for public works projects than for private business ventures, "can estimate the relative economic merits of infrastructure elements using such measures as productivity ratios, cost-effectiveness evaluation, benefit-cost ratios,

budgeting would not, however, mandate any extra funds for capital programs. As always, spending decisions would be at Congress' discretion.

- o *A federal capital budget would help reduce pork-barrel spending.* By establishing comprehensive maintenance and investment strategies, a capital budget would minimize geographic and political considerations in allocating public works money. It would also help prevent elected officials from overinvesting in construction while scrimping on maintenance. New construction is popular with elected officials because it grabs media and voter attention.
- o *A federal capital budget within the unified budget would not disguise the size of the budget deficit.* Rather than obscuring federal finances, a capital budget would clarify precisely how the government is running its capital programs.

Opponents of federal capital budgeting argue that:

- o *A federal capital budget would remove spending discipline from public works programs.* By making it appear that the government could buy now and pay later, a capital budget would lead to exorbitant infrastructure spending. It would convey the idea that the country could afford to purchase whatever facilities it felt it needed, no matter how expansively "need" was defined.
- o *A federal capital budget would inevitably expand to include programs that should remain within the current expenditures budget.* Since educational spending, like highway spending, yields its benefits over many years, it could conceivably be classified as capital investment, as indeed it has been by some people. So, too, with defense spending. What constitutes a capital program deserving of debt financing would quickly become a political question to be settled by political means. This would complicate, not improve, the current system.
- o *A federal capital budget could be used to hide the size of the budget deficit.* By creating a current expenditures budget that excluded borrowing for capital projects from deficit calculations, capital budgeting would make it appear that the government was borrowing less than it actually was. A capital budget would reduce the political impact of running deficits, but it would not lessen the economic effects of public borrowing, which in the case of the federal government are strong enough to influence the economy directly.

and cost recovery ratios. These proxies for economic efficiency help in the difficult tasks of choosing among alternatives and ranking projects in priority order."⁴⁸

The CBO has analyzed highway needs using rate-of-return techniques. It concludes that a strong case can be made for increasing spending from the current level of about \$14 billion per year to about \$16 billion per year. This strategy would maintain highway conditions and provide a good return (38 percent) on investment.⁴⁹ By contrast, bringing the road system up to "minimum engineering standards," which is the spending strategy that many traditional needs studies recommend, would cost a stunning \$28.3 billion to \$33.8 billion per year for twenty years. The return on investment would actually be negative -- that is, fixing highway engineering deficiencies would exceed the consequent reductions in transportation costs. From an economic standpoint, it would not be a wise investment strategy.

The CBO points out that in strict economic terms, the country would possess "enough" highways and other public works "when every project that is economic -- in other words, that delivers benefits in excess of its costs when both are correctly measured -- is implemented. The sufficiency of the nation's infrastructure cannot be measured in the aggregate; 'sufficiency' is measured by the characteristics of the projects undertaken. The key to investing in the 'right' infrastructure, therefore, lies in developing a system that recognizes the diverse possibilities for satisfying the demands for infrastructure services, evaluates them realistically, and implements the best available options."⁵⁰

Capital Budgeting. Several studies, including a 1982 Wednesday Group report, argue that adoption of a federal capital budget -- that is, a budget that separates investment expenditures from recurrent or operating expenditures -- would be a step toward a spending strategy that establishes priorities. According to its advocates, a capital budget would allow projects "to be selected on the basis of need and efficiency rather than for their 'pork value.'"⁵¹ Many experts argue, however, that capital budgeting would allow public works programs to escape budgetary discipline by giving them an unwarranted advantage in the competition among federal programs for scarce spending resources. The issue is discussed more fully on pages 14-15, above.

SECTION III
Financing Infrastructure Investment

"Federal financing mechanisms [are] powerful incentives for public works, affecting the way projects are planned, designed, constructed, operated, and maintained."⁵²

"[The] conditions attached to federal aid might be more important than the level of spending."⁵³

Federal financing policy determines how the government collects and disburses public works money. As suggested by the first quote above, financing policy affects infrastructure spending decisions at all levels of government. When Congress and the Administration change policy, they change the efficiency of public works spending and the investment incentives facing state and local decision makers. Financing policy therefore strongly affects the nation's success in meeting its infrastructure needs.

Financing Policy: User Fees

Most federal programs are financed through general revenues, which are, for the most part, receipts from individual and corporate income taxes. Infrastructure programs, however, are financed mainly through user fees, which are charges (taxes) collected from people who use and benefit from public facilities. The revenues accrue to trust funds that finance public works programs. The gas tax, for example, is a user fee levied upon drivers, and it accrues to the Highway Trust Fund, which finances federal highway activities.

Analysts agree that when set properly, user fees promote equity (or fairness) because beneficiaries pay for the services they receive: motorists pay for the roads they travel upon and fliers pay for air traffic control and adequate runway capacity, for example.

In addition, user fees promote efficiency by affecting the price of, and hence the demand for, the service or good. According to one study, "User fees establish an analog to the private market, where prices are set and users pay according to the size of their service consumption....The fact that users must pay for the use of a facility limits their demand for it and reduces the physical capacity necessary to satisfy demand."⁵⁴ An adjustable user fee could, for example, ease congestion on a given set of roads by rising in price at peak traffic times and places to discourage people from driving. This would reduce the need to add lanes or build new roads (this type of highway finance is called "congestion pricing"). By limiting demand and use, user fees also help prevent a facility from wearing out and requiring replacement prematurely.

User fees can increase the efficiency of investment on the supply side as well as on the demand side. The CBO says that "Better pricing could reveal how much people

value different infrastructure services; by giving managers better information about the cost-effectiveness of different projects, user charges could enable them to improve their investment decisions."⁵⁵ Also, user fees "can be easily segregated and dedicated to facility reinvestment. The prospect of a reliable revenue stream makes it possible to issue revenue bonds to finance the initial capital costs of a project."⁵⁶ A facility supported by user fees (such as a toll bridge or road) can become self-supporting, with both a reliable, predictable flow of funds for maintenance and, if the revenue base is growing, constantly expanding spending resources.⁵⁷

Because they dedicate a revenue source to a specific purpose, user fees are controversial. They raise the issue of how trust funds should be treated in public budgets. On the one hand, say some people, trust-fund programs should be immune from normal budget politics because they are self-supporting. Policy makers have decided that the trust-fund activities are important enough to warrant an independent, stable source of funding. Raiding trust-fund revenues to finance non-trust-fund programs violates the principle that user fees be spent to the benefit of the people who pay them. This argument holds, for example, that the diversion of gas-tax revenues to non-highway purposes breaches the understanding with motorists that the fees they pay will finance road safety, construction, and maintenance.

On the other hand, argue others, tagging revenues for one purpose should not prevent them from being used for other purposes if elected officials decide that is how public money should be spent. It would be unwise, according to this view, to carve out program apportionments from the budget before representatives have worked out public priorities for the year. Rigid dedication of revenues to specific purposes inhibits the ability to change policy in response to shifting circumstances and needs. Pages 20-21 of this report feature a debate between Congressman Bill Clinger and Congressman Bill Frenzel on the treatment of the transportation trust funds within the budget.

The federal highway program employs user fees as extensively as does any other public works program. Even so, most infrastructure studies argue that highway excise taxes (the user fees) fail to do everything they could to promote equity and efficiency. The GAO and the authors of a recent Brookings publication, *Road Work*, point out that "the states are turning increasingly toward general funds [to pay for road activities]. The use of general funds rather than user fees raises questions of equity...[because general funds] are taxes obtained from the entire community without regard to highway use."⁵⁸

In addition, many reports argue, truckers on federal-aid highways generally impose more damage on road surfaces than they pay for in taxes.⁵⁹ Also, as the CBO notes, federal motor taxes are constant, at nine cents per gallon of gasoline for automobiles. The taxes do nothing, as they could, to reduce peak-hour congestion and to account for the different costs of meeting diverse highway needs in different regions of the country.⁶⁰

The authors of the Brookings publication recommend a new, two-part pricing scheme for highways to improve both equity and efficiency. Trucking fees would be levied according to axle weight, rather than total vehicle weight, because it is weight per axle that causes pavement damage, not total vehicle weight. Congestion pricing would be adopted to discourage travel at peak times and places. The technological development that makes congestion pricing possible is automated toll collection, which uses devices such as zebra-stripe stickers and tiny signal-activated radio transmitters to record a vehicle's passage. Together with a policy of building thicker, more durable

roads, road-wear and congestion taxes could, say the authors of the Brookings report, help solve urgent maintenance and traffic problems at relatively modest cost. Further discussion follows below.

Financing Policy: Federal Grant Structure

Several infrastructure studies have identified deficiencies in federal financing policy. The substitution problem has already been mentioned and is the result, by some accounts, of federal policy that fails to encourage local fiscal discipline -- the setting of priorities. In addition, say many reports, the current policy of disbursing money in the form of categorical grants (narrowly targeted aid for specific purposes such as building a certain type of mass transit project) is not flexible enough to meet diverse needs across the country. The result: federal aid often provides incentives that result in inefficient choices as to what to build and maintain.

The CBO describes an array of policy options for correcting these problems. The key principle would be for financing mechanisms to "tailor federal infrastructure spending more closely to local conditions. [This] would give more weight to local interests in allocating funds among infrastructure programs."⁶¹ Federal policy should not, however, cede so much discretion to local officials that parochial interests replace national interests as the basis for national investment policy.

Cost-Sharing Ratios. To encourage local fiscal discipline, the federal government could change the cost-sharing ratios for its grants-in-aid. Instead of offering the same federal-to-state matching ratio for every project in a given grant category, the government could vary matching ratios to reflect the federal interest in individual projects. Faced with paying a higher proportion of the cost for projects eligible for federal aid, local governments presumably would intensify their search for cost-effective solutions to their infrastructure needs.

The NCPWI provides an example of how altering cost-sharing ratios can affect the scrutiny that a proposed project receives and can lead to cost-effective solutions to infrastructure needs. The NCPWI reports that "A projected expansion of Norfolk Harbor was to cost \$400 million. To accommodate large modern coal ships, the project initially called for deepening the main channels from 45 to 55 feet....Under a U.S. Army Corps of Engineers local cooperation agreement (LCA), the local port authority was required to contribute a share of the project cost."⁶² Faced with cost-sharing, the port authority revised its estimated needs. It decided not to deepen the inbound channel because lightly loaded or empty inbound ships draw relatively little water. The port authority also decided to deepen the outbound channel to only 50 feet. In the end, the project cost \$50 million -- an eightfold price reduction. Upon implementation of cost-sharing in 1986, nearly a third of Corps projects were likewise redesigned at lower-than-initial costs.

Increasing Local Discretion. The CBO says that if the government were willing to do more than simply revise cost-sharing ratios, it could adopt policies to "lower the boundaries between existing infrastructure programs and thereby increase competition among them for federal resources."⁶³ Local public works authorities would be given authority to decide which projects were most needed. They would be allowed to shift money among program accounts to finance those projects. Such policies could be pursued "either by (1) ceding to states and localities greater discretion in the use of federal infrastructure subsidies; or by (2) changing the manner in which the federal government allocates those subsidies."

Should It Stay or Should It Go?

From 1956 to 1990, the Highway Trust Fund (HTF) accumulated about \$16 billion in surplus revenues. Some analysts argue that this money ought to be spent fixing and expanding our road system. To facilitate this spending, they often urge that the HTF be taken off-budget. Others believe that to preserve budgetary integrity and flexibility, *all* trust funds should remain on-budget. The difference of opinions arises out of differing judgements on the effect of the unified budget, which puts all government revenues and expenditures in one pot, upon federal policy. Wednesday Group members Bill Clinger (R-PA) of the House Committee on Public Works and Bill Frenzel (R-MN) of the House Committee on the Budget have agreed to share their views on trust funds and the unified budget.

Trust Funds Don't Belong in the Unified Budget by Rep. Bill Clinger

Federal programs financed by trust funds are suffering at the hands of the unified budget. They are not permitted to spend out their balances at a time when demand for trust-fund-supported services is growing.

Several of our country's most expensive and extensive infrastructure and social programs are supported by trust funds. Highways, airports, and Social Security are all trust-fund-supported programs that share the same financing mechanism -- dedicated federal excise taxes, the receipts of which are deposited into specific accounts that finance program operations. By including trust-fund programs in the unified budget, Congress subjects their outlays to the budget process, to spending limitations, and to Gramm-Rudman targets. Because of these mechanisms, the unified budget artificially constrains the trust funds from spending at a rate equal to their income, even in the face of increasing demands for new expenditures.

A unified budget counts all income -- regardless of source -- and all spending as though it flows through the same bank account. But trust funds are different. They derive their income from dedicated taxes that are very similar to user fees. And unlike programs financed by general Treasury revenues, trust-fund-supported programs cannot borrow from the Treasury if they run out of money. By law, a trust-fund-supported program ceases to operate if it exhausts its resources.

Congress does further disservice by using unobligated balances within the trust funds to help mask the size of our federal budget deficit. The Congressional Budget Office estimates that the federal government's actual operating deficit will be \$270 billion in fiscal 1990. Yet the reported deficit is expected to be only \$138 billion. Why the big difference? Congress is "borrowing" \$132 billion in unspent trust-fund revenues to cover the shortfall, and under the unified budget, we don't have to factor these sums into the deficit. Thus, not only does the unified budget constrain spending, but it also uses unobligated balances to mask the debt.

More and more, demands for government services are outstripping resources. The means now available -- unspent trust funds -- cannot be used. And if Congress were to contemplate instituting new "user fees" in the future, how can we sell taxpayers on the idea when we've so grossly abused existing programs?

The Value of the Unified Budget

by Rep. Bill Frenzel

To suggest taking the HTF, or any other trust fund, off-budget is to suggest dispensing with the unified budget. The unified budget, however, serves purposes that might outweigh those that would be served by moving programs off-budget.

In the first place, a unified budget shows in a meaningful way how tax and spending policies (fiscal policy) affect the economy. When we say that the fiscal 1989 budget deficit was \$152 billion, we mean under a unified budget that the government spent \$152 billion more than it collected in revenues. Taxpayers went \$152 billion in debt. And when we say that a policy initiative would cost \$2 billion, we see that it would entail additional debt or new taxes or spending cuts of the same amount.

In addition, a unified budget enables the government to tailor federal policies to changing national needs. It allows elected officials to choose among the many ways they can raise and spend money. By contrast, off-budget programs, which receive automatic spending levels and predetermined revenue sources, constrict the options available to policy makers. If a sufficient number of programs were taken off-budget, spending and taxing practices would become rigidly specified, and the government would become unable to respond to calls for new or different policies.

This possibility might seem remote, but to many people who know Washington politics, it does not seem improbable at all: as soon as one program was given special treatment, the pressure to give other programs the same treatment would become immense and perhaps irresistible. Why, the question would arise, do highways have a guaranteed funding level when other deserving programs such as child care or drug interdiction do not? To take the HTF off-budget would be to start down a slippery slope toward budget ossification. It would be an evasion of the congressional duty to set national priorities in the face of changing demands and limited resources.

Some people nevertheless argue that trust-fund programs should be taken off-budget to ensure that dedicated tax revenues are spent on the specific purposes for which they were created -- motor taxes, for example, should be spent on roads and bridges. They contend that motor taxes have been hijacked for deficit reduction, which cheats highway users out of promised benefits. To end this injustice and to boost road spending, they urge that the HTF be taken off-budget.

But the fact of the matter is that general taxpayers have been subsidizing, not shortchanging, highway programs for over a decade. The Congressional Budget Office reports that federal highway outlays *exceeded* user taxes by more than \$13 billion in 1980-1989. Meanwhile, the surplus in the highway account of the HTF held steady at about \$9.5 billion (it built up to that level during the Ford and Nixon Administrations). The implication cannot be overstated. *There is no need to take the HTF off-budget because the user taxes are already being spent in full on highway programs.*

Thus, while there is no compelling reason for taking the HTF off-budget, there is a strong reason for keeping it on-budget: a unified budget prevents sophistry. It does not obscure the fact that an increase in trust-fund spending, like an increase in any other type of spending, results in larger deficits or higher taxes or lower spending elsewhere in the budget. The unified budget shows that a spending hike is a spending hike, the merit of which must be weighed against other claims on the nation's limited fiscal resources.

Options that would increase project scrutiny and comparison by giving state and local governments greater discretion in deciding where federal aid would be invested include the following:

- o Use a consolidated infrastructure block grant to maximize state and local control over federal assistance. The CBO says that "Allowing states and localities to allocate federal funds among infrastructure modes might lead to a more efficient set of projects: by virtue of their greater proximity to local problems, states and localities may be better able to choose among projects for which rates of return vary widely both by mode and by region."
- o Allow recipients of categorical grants to transfer funds between infrastructure accounts to enable states to fine-tune federal assistance. Whereas a block grant would not stipulate how funds should be spent, this proposal would guarantee that at least some federal assistance went to purposes deemed important by Congress. The ability to transfer funds would allow the states to take some money from grant categories they did not regard as priorities and spend it on categories they did. Thus, the federal incentives to invest in different activities would be the same from state to state, but actual investment levels would vary within some set range.
- o Improve localities' access to subsidized credit by creating state revolving funds (SRFs), which essentially would be public banks that provide infrastructure loans to local governments and recycle the repayments into new loans. Alternatively, the federal government could establish a financial entity to purchase state/local bonds and resell them in some standard format. The idea would be to ensure that small, infrequent borrowers do not go without infrastructure simply because they face relatively high borrowing costs in private financial markets. Limits could be set on the form and purposes of SRF loans.

Options that would increase competition among projects but retain decision-making at the federal level include:

- o Change procedures of existing federal agencies to require them "to prepare plans outlining the long-term goals of individual infrastructure programs, and specifying how those goals could be achieved, when, and at what cost. Such plans would provide the Congress with a ready system for measuring progress and assessing possible adjustments."
- o Create a National Infrastructure Fund (NIF) to merge oversight of all federal infrastructure spending into a single agency. An NIF could "negotiate assistance in the form of grants after evaluating proposed projects [and] would give the government greater control over the distribution of funds between and within the different infrastructure modes." In CBO parlance, an NIF differs from an SRF in that the former gives grants, while the latter makes loans.

The CBO is not alone in suggesting some type of national infrastructure fund or infrastructure bank to help states and localities meet their investment needs. The JEC recommends creation of an NIF to provide interest-free loans, with the capital being repaid by state and local governments from taxes or user fees.⁶⁴ Senator Daniel Patrick Moynihan (D-NY) has introduced legislation to establish state infrastructure revolving funds and a national infrastructure corporation to provide flexibility in the

use of highway funds and to increase the money available for a variety of public works improvements.⁶⁵

Congressman Bill Clinger (R-PA) has proposed a National Public Works Corporation that "would be a revolving loan fund requiring a *one-time* federal capital infusion of \$2.5 billion. The states -- should they choose to participate -- would be required to ante up a pro-rata share that would generate an additional \$2.5 billion if all of the states participated. Together these monies would be capable of leveraging up to \$50 billion for financing vital public facilities around the country."⁶⁶

Another study recommends "a federal infrastructure bank linked to a series of state infrastructure banks. These banks would make below-market loans for infrastructure repairs and perhaps other infrastructure investments. Upon repayment of the loans, the funds would be recycled to other capital projects.... Permanence, visibility, and professionalism are the critical arguments in favor of an infrastructure bank.... It is essential that federal policy allow local discretion in deciding how any new infrastructure dollars are spent.... Paradoxically, the least essential contribution an infrastructure bank may make is the actual financing of the next generation of capital formation. More critical is the leverage it can exert on the nation's institutional capacity to plan and manage capital facilities."⁶⁷ The study emphasizes that the rationale for such a bank would be to "finance today's backlog of infrastructure investment," not simply to build new facilities to forestall an "infrastructure crisis."⁶⁸

Financing Policy: The Municipal Bond Market

To some extent, proposals for a national infrastructure bank are intended simply to make more federal money available for capital investment. But they also could enable small jurisdictions to overcome relatively high borrowing costs. Some municipalities might benefit from such assistance because of certain limitations to private capital markets, such as "the illiquidity of municipal bonds, the relatively high fixed costs of issuing debt in small quantities, and the uncertainty surrounding the credit-worthiness of infrequent borrowers."⁶⁹

Recent changes in the tax code have made localities' access to capital a controversial infrastructure issue. Many people argue that the 1986 Tax Reform Act compounded the problems of small communities seeking to borrow in private markets. The Act "limits the growth of tax-exempt bonds; increases state and local borrowing costs; and, through tax rate reductions and other provisions, reduces the tax advantage resulting from the interest exemption."⁷⁰ Bond issues have been the financing mechanism for 40 to 50 percent of municipal infrastructure projects in the past, so the restrictions in the new law could seriously hamper state and local efforts to meet investment needs.⁷¹

The CBO and NCPWI, however, raise questions as to whether tax reform has seriously impaired state and local access to private capital. First, while some tax reform provisions increased borrowing costs, other provisions had offsetting consequences. Second, any conclusion that borrowing has slowed since 1986 must be tempered by the fact that "[many] governments borrowed more heavily than usual in 1985 and 1986, anticipating more restrictive tax legislation. These funds are available for ongoing and new projects."⁷² Third and most important, "[the] law's restrictions on state and local government borrowing were motivated in part by the explosive growth of tax-exempt borrowing for essentially private activities, such as industrial parks and student loans."⁷³ In 1984, only 23.1 percent of state and local revenue bonds financed projects that would fall into the category of basic infrastructure.⁷⁴

Thus, there is evidence that jurisdictions have used their tax-exempt status for many purposes other than infrastructure. Depending on how one feels about federal subsidies for non-infrastructure borrowing, reducing such practices may have been a desirable outcome.

Financing Policy: Privatization

One infrastructure financing option that has received increasing attention is privatization, the practice of enlisting private firms to deliver public services. Two factors have contributed to this growing attention. First, privatization carries a political appeal. It can allow elected officials to expand services to constituents without raising taxes or cutting spending. It can ease the difficult job of stretching limited resources to meet public needs and demands.

Second, privatization has an economic appeal. It can reduce pork-barrel spending by putting a premium on economic considerations, as opposed to political considerations, in making investment decisions. In addition, privatization can prevent a bias against proper maintenance of infrastructure facilities. This bias exists because elected officials realize a higher political dividend from financing high-visibility construction projects than they do from financing low-salience maintenance activities. The result can be a systematic underinvestment in maintenance and a progressive erosion of public assets. Finally, privatization can promote rational use of infrastructure facilities by charging user fees.

Privatization comes in three basic forms. First, a government agency can contract private firms to provide specific services, such as street cleaning, garbage collection, and mass transit. Second, a government can allow a private firm to build and operate a facility, such as a highway or sewage-treatment plant, for profit. Ownership often reverts to the government after a fixed time period, such as twenty years. Third, a government can sell an asset, such as a parking garage or a railroad, to the private sector. The buyer can dispose of the asset in whatever manner it sees fit.

Highway privatization usually involves arrangements that allow private firms to build and operate toll roads for profit (the second of the above forms of privatization). This policy has emerged as a pragmatic way to relieve crowded highways despite tight public budgets. Virginia, for example, recently approved construction of a private toll road to redress serious congestion near Dulles airport. In addition, the California state legislature has approved four demonstration projects for private toll roads, and other states are investigating the possibility of private-sector financing of various infrastructure projects.

Hailing these developments, one analyst says that "in an era of fiscal constraints and federal deficits, significant increases in public spending are simply not in the cards. Hence, the appeal of the private-sector alternative. For one thing, when projects must meet investors' rate-of-return expectations, only economically sound, high-priority projects are likely to get selected. And privately owned projects are also more likely to charge market prices for their use, thereby limiting congestion. In addition, the revenues generated by pricing will be retained by the project, ensuring proper maintenance over its lifetime. All of this is in marked contrast to the typically politicized modus operandi that characterizes many public-sector works."⁷⁵

Privatization is not, however, without its critics. In general, the arguments against privatization are that it finds limited opportunity for application and that it creates the conditions for monopoly power. In regard to contracted services (the first of the above forms of privatization), one critique points out that privatization may not lower costs or enhance efficiency. This is because the market for contracted services "operates less like textbook competition and more like textbook monopoly or oligopoly, in which prices are driven as much by relative bargaining power and political considerations as by underlying production cost."⁷⁶ In addition, private contractors seeking to earn profits may choose to reduce or eliminate services to people without alternative means of supply. Public agencies, on the other hand, may view these services as part of a larger social policy that merits subsidization.

SECTION IV

Accelerating Technological Innovation

"New technologies are emerging which, if well applied, can both improve the quality of our infrastructure systems and enable the more effective use of public funds."⁷⁷

"Current resource, economic, environmental, and political limits suggest that the country may now require policies and programs leading to more efficient or different, rather than more or bigger, systems."⁷⁸

In the last fifty years, science has transformed the way things are done in virtually all spheres of daily life -- except, perhaps, in building and maintaining infrastructure systems. To a greater extent than might be desirable, the nation's infrastructure has escaped the postwar technological revolution. New technologies can, however, dramatically increase the level of infrastructure services that the economy obtains from a given set of facilities or a given amount of spending. It can also provide alternative means of delivering traditional infrastructure services. Study after study therefore recommends that the acceleration of technological innovation and its adoption in the field be a major component of the national strategy for closing the gap between national infrastructure needs and spending resources.

As one civil engineer says in a report on Ohio's infrastructure, "I am alarmed to hear everyone talk about spending \$120 million of state bond revenues and \$6 million from the Cincinnati earnings tax for infrastructure repair and maintenance, while no one even mentions the widespread critical need for research and development. Infrastructure research and development and innovative thinking would allow us to use this money judiciously and get more value from it; without research, our infrastructure -- our public works -- will not improve in the long term."⁷⁹ Even small research and development (R&D) investments, he says, would help prevent construction and maintenance efforts from becoming costly but temporary repair jobs and would result in tremendous savings for the governments involved.

Infrastructure Technology: Promising Applications

Researchers have found dozens of ways in which new technologies could be incorporated into public works programs. In the first place, advanced materials and techniques can reduce construction and maintenance costs. The OTA writes that "innovative technologies and methods used during the reconstruction of a bridge near Washington, DC, saved at least half a million dollars and reduced the time required for the project by 7 months."⁸⁰ If the nation were to spend \$1 trillion on infrastructure in coming years, an improvement of just 1 percent in the performance and durability of public facilities would yield savings of \$10 billion.

Advanced information technologies and computer models can help authorities manage public works systems in ways that yield cost savings and extensions of facility lifespans. The report on Ohio's infrastructure says, for example, that new diagnosis and maintenance procedures could produce nearly a one-hundred-fold return on investment for municipal maintenance programs. These new procedures could extend the useful life of public works by 20 percent -- without any increase in spending levels.⁸¹

The same report describes a statistical model that predicts the condition of a sewer system as it ages and determines the optimal rehabilitation strategy. When applied to a town in Ohio with 180 miles of sewer pipes ranging in age from 10 to 130 years, the model provided an optimal rehabilitation strategy that could save the residents \$20 million over fifty years -- a 57 percent savings.

Besides lowering construction and maintenance costs, new technologies allow the implementation of operating procedures that enhance facility performance. Congestion pricing that relies on tiny radio transmitters placed in individual automobiles has already been mentioned as an example. In addition, the operators of the Lincoln Tunnel in New York City increased the amount of traffic that could go through in a given time period by ten to twelve percent simply by computerizing control of the entrance rate into the tunnel. And the FHWA, through its Pathfinder program being tested in the Los Angeles area, is investigating the potential for "smart cars" travelling on "smart highways" to use computers and radio signals to keep traffic moving smoothly.

Finally, new technologies could prove crucial to developing alternative ways of providing traditional services such as mobility or waste management. Double-stack container trains, for example, have revitalized the railroads into efficient freight carriers (thereby reducing the amount of trucks travelling on already congested highways). Advanced telecommunications that allow people to work at home could reduce the demand for traditional transportation facilities. The state of California is already experimenting with such technologies and work programs. Looking toward the future, high-speed levitated trains have been discussed as a potential part of the country's transportation system. And in waste management, the Biosphere II project is investigating environmentally sound techniques for disposing of society's wastes, a goal that the Ipswich Garbage Barge and the Baltimore Sewage Train have shown is urgent.

Infrastructure Technology: Barriers to Innovation

Despite the potential for these and other technological innovations to improve the delivery of infrastructure services, public works authorities and contractors continue to use materials and techniques that seem anachronistic. In part, this is because many factors impede innovation in public works:⁸²

- o Market Failures: Private firms often do not engage in infrastructure R&D because they cannot capture the profits from it; when they develop an innovation, other firms can often copy it without paying compensation. In addition, the decentralized nature of the construction industry means that there are not many large companies with the resources to conduct R&D.
- o Budget Politics: Politics makes infrastructure R&D a lower priority among elected officials than infrastructure construction or even maintenance. Highway R&D spending, for example, was only 0.3 percent of all highway spending in 1985 -- not enough, according to some sources.⁸³ The poor-

cousin status of R&D exists mainly because elected officials usually prefer to fund capital projects that yield an immediate political pay-off than research efforts that are hard for taxpayers to notice and appreciate.

- o Fragmentation: Research is dispersed among so many publications, universities, and agencies that it is extremely difficult to evaluate and transfer to the field, where workers actually put it to use. And "some research evaluation reports are either so site-specific or written in such highly technical language that others cannot use the information."⁸⁴
- o Risk and Liability: As the NCPWI says, "Unproven technology involves considerable risks for the manufacturer or builder, as well as the funding and operating agencies."⁸⁵ Thus, operating authorities and contractors take a conservative approach to design and construction, which can prevent the consideration of innovative ideas and solutions. According to the NCPWI, this problem arises because of "the lack of a credible, authoritative institution in the U.S. to test and approve new technologies and from the nation's litigious character."⁸⁶
- o Design Standards: Federal design standards for facilities ensure that the structures are safe, but they stifle innovation by keeping contractors from devising or adopting new construction techniques. Cost-saving materials or designs must await federal approval, which can take a long time. Another problem with federal design standards is that they sometimes result in facilities that are built to specifications inappropriate to local conditions.
- o Problems of the Profession: Civil engineering is not as prestigious or lucrative as other engineering disciplines.
- o Procurement: Low-bid procurement practices encourage contractors to stick with tried-and-true methods and materials. There is little incentive to use, for example, a pavement material that is expensive but relatively long-lasting because the greater cost of the superior material prevents the contractor from being able to submit a competitive bid.
- o Culture: The public resists making behavioral changes that could increase the capacity of infrastructure systems. Car-pooling and mass transit, for example, are two possible ways to alleviate highway congestion, but they generally have not been successful solutions, mainly because Americans are reluctant to abandon the convenience of driving their own cars.

Infrastructure Technology: Promoting Innovation

Many studies recommend that the federal government increase its financial support of infrastructure R&D. The rationale is simple: the expenditures often result in striking cost savings. The California Department of Transportation, for example, estimates that it has realized a 280 to 540 percent return on its R&D activities since the mid-1960s.⁸⁷

To overcome non-financial barriers to innovation, the NRC recommends the creation of a federal institution to spearhead a national effort "to ensure that research needs and opportunities are identified systematically and comprehensively, to encourage research efforts where they are lagging, and to sponsor cross-cutting research that is not adequately pursued within the research communities of individual modes....[Steps]

must be taken to ensure that the beneficial results of such research are transferred to and adopted by managers, suppliers, and users of infrastructure systems."⁸⁸

Major goals of a federal institution would be to foster technology transfer by closely involving the ultimate technology users (the contractors) in the R&D process and to continue existing research efforts funded by the federal government. Also, the NRC reports that an effective research program depends upon perceiving and treating infrastructure as a whole -- engaging in research that cuts across modes.⁸⁹

The NCPWI finds that "the goal of accelerating public works innovation would be served best by regional centers responsive to the public works market and particular variations and requirements within their respective geographic areas. Such centers could be either university based or operated in conjunction with existing research institutions."⁹⁰ Some analysts believe that universities are the most profitable place to conduct infrastructure R&D because professors and graduate students often have more expertise than do state transportation authorities.

In addition to funding and coordinating research, a central institution could help overcome the problem of risk and liability. The idea would be for such an institution to test and approve new technologies that contractors and state agencies could then put to use. Demonstration projects, which take promising technologies out of the laboratory and into the field, could also be of help because when successful, they prove that new technologies can be adopted with minimum risk.⁹¹ Another option for limiting state and local exposure to liability would be for the federal government to enter formal agreements to share the risks of unproven technologies. European experience has shown that often no single party can afford to accept all the risk of innovative technologies.⁹²

To prevent a stifling of innovation, many studies have recommended a review of federal and professional infrastructure codes. The NRC says that standards and regulations, although "necessary to ensure safety and reliability...can become obsolete and a barrier to innovation if they are not revised on a periodic basis. Many standards that apply to highway and railroad systems have their origin in technologies prevalent at the turn of the century; therefore, they do not accommodate easily new designs, new materials, and new construction methods."⁹³ "In addition some situations," echoes the JEC, "these [federal] standards appear unreasonable and unrelated to local needs. Unquestionably, they have an impact on the overall cost of a given project....The bill for infrastructure development is high enough without having to pay for facilities which are designed to standards which may no longer be appropriate."⁹⁴

The authors of the Brookings publication, *Road Work*, reveal how federal standards can affect infrastructure cost effectiveness (in this case, they argue that the government should *increase* the rigor of its standards). The authors argue that federal standards for pavement thickness, which were established in a series of tests in the mid-1950s, produce road surfaces that cannot accommodate today's axle loads. The study calculates that an optimal investment policy -- which essentially means building thicker, more durable roads -- could yield annual maintenance savings of almost \$9.5 billion. The extra costs of building thicker highways would partially offset these savings, but only by about \$1.3 billion. The result of changing construction standards could be to save over \$8 billion annually, mainly in reduced maintenance costs.

Another barrier to infrastructure innovation, one over which the federal government may have little control, is the structure of the civil engineering discipline.

The problems of civil engineering include "(1) an emphasis on the design of new systems and structures [as opposed to operations and maintenance] in education and practice, (2) the status of civil engineering in engineering schools, and (3) the lack of sustained funding for civil engineering research."⁹⁵

In addition, civil engineering may soon suffer a depletion of its ranks: "over the period 1985-1989, about 16 percent of all engineers in state transportation agencies are expected to retire."⁹⁶ Meanwhile, the number of degrees awarded in civil engineering has been falling rapidly. The result is that "the nation has a shortage of technically competent personnel to meet future requirements of the public works profession. Federal action is needed to support and stimulate the education and training of public works professionals from all disciplines and academic specialties."⁹⁷ In other words, the federal government could increase spending on civil engineering scholarships and research efforts, perhaps, in part, by requiring the National Science Foundation to devote a larger part of its budget to civil engineering.

CONCLUSION
The Infrastructure Challenge

The challenge confronting federal public works programs is that infrastructure needs exceed investment levels -- some studies say by a lot, others by a little -- but the budget contains little room for increasing outlays. The government must therefore try to maximize the infrastructure services it gets out of its spending and its existing facilities. This paper has reviewed several prominent infrastructure studies to see what could be done in the areas of determining the scope of federal responsibility and action; assessing needs and priorities; financing infrastructure investment; and accelerating technological innovation.

The upcoming highway reauthorization presents an opportunity for law makers to consider fundamental changes in the program. Such changes would set an example for improving other infrastructure programs and would shift attention to issues other than spending levels, which have been the traditional focus of public works reauthorization debates. For, as the authors of the Brookings study conclude, spending is not everything when it comes to laying the foundation for a prosperous, growing economy: "The recent decline of America's road system has been seen as a threat to the nation's quality of life and as yet one more way the United States is starting to fall behind other countries. It is widely believed that the solution calls for hundreds of billions of dollars of capital investment. Such high levels of spending, however, are not only unnecessary; they may lead to a road system that is even more costly to maintain and more of a drain on the public purse than the current system."⁹⁸

APPENDIX

Infrastructure studies used for this report:

Fragile Foundations: A Report on America's Public Works, by the National Council on Public Works, 1988

Hard Choices: A Report on the Increasing Gap Between America's Infrastructure Needs and Our Ability to Pay for Them, by the Joint Economic Committee of Congress, 1984.

Highway Technology: The Structure for Conducting Highway Pavement Research, by the United States General Accounting Office, November 1987.

Infrastructure Technologies: Rebuilding the Foundations, preliminary report, by the U.S. Congress Office of Technology Assessment, 1988.

New Directions for the Nation's Public Works, by the Congressional Budget Office, 1988.

Perspectives on the Nation's Infrastructure, by Royce Hanson, ed. (National Academy Press), 1984.

Road Work: A New Highway Pricing and Investment Policy, by Kenneth A. Small, Clifford Winston, and Carol A. Evans (The Brookings Institution), 1989.

Recent studies of note:

America in Transition: Report of the Task Force on Transportation Infrastructure, by the National Governors' Association, 1989.

Federal Policy and Financing Alternatives for Surface Transportation Infrastructure, by J.F. Hornbeck (Congressional Research Service), 1989.

Moving America: New Directions, New Opportunities, by the U.S. Department of Transportation, 1990.

New Transportation Concepts for a New Century, by the American Association of State Highway and Transportation Officials, 1989.

Rebuilding the Foundations: Public Works Financing and Management -- Issues and Conclusions, by the U.S. Congress Office of Technology Assessment, 1990.

ENDNOTES

1. Adam Smith, *An Inquiry into the Nature and Causes of The Wealth of Nations* (Chicago: The University of Chicago Press, 1976), Volume II, p. 244.
2. What is the nation's infrastructure and why does it matter? The term refers to those public facilities that support the day-to-day functioning of the economy, primarily: airports, highways and bridges, mass transportation, ports and waterways, water supply, and waste disposal. Historically, these facilities have been known as public works or public capital.

Public works programs have also been known as "pork" -- that is, programs in which spending is directed by political, rather than economic, considerations. "Pork" generally refers to federally-financed projects that primarily serve local interests. Many analysts regard pork-barrel spending as a source of waste in the federal budget. The argument is that instead of relying of federal largesse, local governments should use their own resources to finance projects of limited national benefit.

It should be noted, however, that pork-barrel spending is not consuming public works budgets. In the last highway reauthorization, demonstration projects, which are regularly criticized as wasteful pork, accounted for only 2 percent of total highway authorizations (\$1.4 billion out of \$70 billion total). It should be noted as well that demonstration projects allow highway authorities to test technologies and innovations with the potential to save taxpayers tens of millions of dollars over the long run. All of which is to put the magnitude of this problem in perspective, not to deny that pork-barrel spending occurs.

3. Kenneth A. Small, Clifford Winston, and Carol A. Evans, *Road Work: A New Highway Pricing and Investment Policy*, (Washington, D.C.: The Brookings Institution, 1989), p. 1.
4. National Council on Public Works, *Fragile Foundations: A Report on America's Public Works*, (Washington, D.C.: The U.S. Government Printing Office, 1988), pp. 42-43.

The Congressional Budget Office, *New Directions for the Nation's Public Works*, (Washington, D.C.: The U.S. Government Printing Office, 1988), p. 5.

5. The United States General Accounting Office, *Highway Technology: The Structure for Conducting Highway Pavement Research*, (Washington, D.C.: The U.S. Government Printing Office, November 1987), p. 13.
6. Small, *et al*, p. 7.
7. NCPWI, p. 18.

8. CBO, p. 3.

9. NCPWI, pp. 75-86.

Unless explicitly stated otherwise, this Wednesday Group report does not mean to convey the impression that any study reviewed for this report recommends any particular finding or proposal. In general, the studies used for this report describe, rather than endorse, the cited policy options.

10. CBO, p. xiii.

11. CBO, pp. xiii, 88, 115.

This problem of public goods plagues technological innovation in infrastructure as well. See final section of this report for discussion.

12. CBO, p. xiii. For more detailed discussion, see NCPWI, pp. 99-100. See also:

George E. Peterson, "Financing the Nation's Infrastructure," in Royce Hanson, ed., *Perspectives on the Nation's Infrastructure* (Washington, D.C.: National Academy Press, 1984), pp. 126-127.

Advisory Commission on Intergovernmental Relations, *State Mandating of Local Expenditures: In Brief* (Washington, D.C.: 1978).

Office of State and Local Finance, Department of the Treasury, *Federal-State-Local Fiscal Relations: Report to the President and the Congress* (Washington, D.C.: U.S. Government Printing Office, 1985).

13. NCPWI, pp. 12, 80-84, 97-102.

14. CBO, p. xiv.

15. CBO, p. 19.

16. Professor Heywood Sanders of Trinity University in San Antonio will discuss this issue in a forthcoming Wednesday Group report. He briefly addresses it in an opinion piece he wrote for *The New York Times*:

Heywood T. Sanders, "What Crumbling Infrastructure?" *The New York Times*, December 17, 1988.

17. Congressional Budget Office, *Federal Policies for Infrastructure Management*, (Washington, D.C.: Government Printing Office, 1986), pp. 80-81.

Some evidence in the wake of Reagan Administration cuts in intergovernmental grants supports this conclusion. See:

Raymond A. Rosenfeld, "Federal Grants and Local Capital Improvements: The Impact of Reagan Budgets," *Public Budgeting and Finance*, Spring 1989, pp. 74-84.

18. NCPWI, p. 88.

19. NCPWI, p. 88.

20. When Congress passed the 1956 Highway Act, it intended to return the gas tax to its pre-1956 level upon completion of interstate construction. This, in addition to the almost negligible amount of money directed toward maintenance, reflect the original emphasis on construction.

Congressional Budget Office, *Highway Assistance Programs: A Historical Perspective* (Washington, D.C.: Government Printing Office, 1978), p. 16.

21. CBO, 1988, p. 5.
22. NCPWI, p. 87. GAO, p. 19.
23. Any transfer of highway responsibilities from the federal to the state level (known as a "turnback") would raise the question of whether the federal gas tax should be reduced to give the states room to raise their own gas taxes. The states, after all, would require new resources to pay for programs handed over to them. The gas tax would be a likely revenue source, both for political and policy reasons. If state governments chose, for whatever reasons, not to create new highway revenues, turnbacks might result in some programs now financed federally going unfunded. NCPWI, p. 89.
24. CBO, 1988, p. 21.
25. Transportation 2020, p. 18. NCPWI, pp. 88-89.
26. CBO, 1988, p. 129.
27. NCPWI, p. 114.
28. Kelly D. O'Day and Lance A. Neumann, "Assessing Infrastructure Needs: The State of the Art," in Royce Hanson, ed., *Perspectives on Infrastructure* (Washington, D.C.: National Academy Press, 1984), pp. 70-71.
29. NCPWI, p. 8. Other statistics in this paragraph and the succeeding one are from the same page.
30. CBO, 1988, p. 132.
31. CBO, 1988, p. 131.
32. CBO, 1988, pp. 132-133.
33. Ralph Gakenheimer, "Infrastructure Shortfall: The Institutional Problems," *Journal of the American Planning Association*, Winter 1989, p. 16.
34. Gakenheimer, p. 15.
35. Pat Choate and Susan Walters, *America in Ruins* (Durham, N.C.: Duke Press Paperbacks, 1983).

"The Decaying of America," *Newsweek*, August 2, 1982, pp. 12-18.

36. David A. Aschauer, "Rx for Productivity: Build Infrastructure," *Chicago Fed Letter*, Number 13, September, 1988.

Michael D. Deich, W. David Montgomery, and Elizabeth A. Pinkston of the Congressional Budget Office, "Lessons of the Past, Opportunities for the Future: The Changing Role of Public Investment in Economic Growth," Remarks to the Colloquium on the Nation's Infrastructure Policy, November 17, 1989.

37. Nancy J. Perry, "Good News about Infrastructure," *Fortune*, April 10, 1989, p. 94.
38. Gakenheimer, p. 15.
39. Peterson, p. 116.
40. The Federal Highway Administration, *The Status of the Nation's Highways and Bridges: Conditions and Performance* (Washington, D.C.: Government Printing Office, 1989), p. I.7.
- CBO, 1988, p. 7.
41. Peterson, p. 130.
42. Joel A. Tarr, "Evolution of the Urban Infrastructure in the Nineteenth and Twentieth Centuries," in Royce Hanson, ed., *Perspectives on Urban Infrastructure* (Washington, D.C.: National Academy Press, 1984).
43. Peterson, p. 130.
44. NCPWI, p. 105.
45. O'Day and Neumann, p. 70.
46. O'Day and Neumann, p. 97.
47. National Research Council, *Infrastructure for the 21st Century* (Washington, D.C.: National Academy Press, 1987), p. 17.
48. NCPWI, p. 107.
49. CBO, 1988, p. 14.
50. CBO, 1986, pp. 9-10.
51. NCPWI, p. 118.
52. U.S. Congress Office of Technology Assessment, *Infrastructure Technologies: Rebuilding the Foundations*, preliminary report (Washington, D.C.: The OTA, 1988), p. 9.
53. CBO, 1988, p. 19.
54. Peterson, p. 125.
55. CBO, 1988, p. xix.

56. Peterson, p. 126.
57. NCPWI, p. 62. Peterson, p. 123.
58. GAO, p. 20.
59. CBO, 1986, p. 64. Small, *et al*, pp. 43-44.
60. CBO, 1988, p. xix.
61. CBO, 1988, p. xxi.
62. NCPWI, p. 62.
63. This quote and those immediately following are from: CBO, 1988, pp. 113-126.
64. JEC, pp. 13-14.
65. Senator Daniel P. Moynihan, S. 2088, 100th Congress, February 24 (legislative day, February 15), 1988.
66. Representative Bill Clinger, H.R. 113, 101st Congress, January 3, 1989.
The quote is from a press release following the bill's introduction.
67. Peterson, pp. 127-129.
68. Peterson, p. 127.
69. CBO, 1988, p. 121.
70. NCPWI, p. 68.
71. NCPWI, p. 69.
Rebuild America, "Impact of Tax Reform on Infrastructure Financing," Rebuild America Position Paper, September 9, 1987.
72. NCPWI, p. 69.
73. NCPWI, p. 68.
74. NCPWI, p. 68.
75. Robert W. Poole, Jr., "The High Road to Better Highways," *The Wall Street Journal*, June 28, 1989.
76. Elliott D. Sclar, K. H. Schaeffer, and Robert Brandwein, *The Emperor's New Clothes: Transit Privatization and Public Policy* (Washington, D.C.: Economic Policy Institute, 1989), p. 2.
77. NRC, p. 1.
78. OTA, p. 1.

79. Dr. Constantine N. Papadakis, Dean of Engineering, University of Cincinnati, in Ohio Infrastructure Institute, *Presentation* (Cincinnati, OH: University of Cincinnati College of Engineering, July, 1989), Appendix I, p. 1.
80. OTA, p. 3.
81. Ohio Infrastructure Institute, Appendix I, p. 4.
82. GAO, pp. 40-42. NRC, pp. 27-38. NCPWI, pp. 123-124.
83. GAO, p. 34. NRC, p. 27.
84. GAO, p. 34.
85. NCPWI, p. 128.
86. NCPWI, p. 128.
87. NCPWI, p. 124.
88. NRC, p. 37.
89. NRC, pp. 39-40.
90. NCPWI, p. 26.
91. NCPWI, p. 127.

As discussed in footnote 1, demonstration projects are currently in use and are a small part of the federal highway budget.

92. NCPWI, p. 128.
93. NRC, p. 30.
94. JEC, p. 17.
95. NRC, p. 31.
96. NCPWI, p. 27.
97. NCPWI, p. 27.
98. Small, *et al*, p. 122.

About the Wednesday Group

The House Wednesday Group is a Republican organization founded in 1963 in the U.S. House of Representatives. It provides a forum through which its members exchange information about politics and policy, develop legislative proposals, and advance their knowledge on issues of shared concern.

The thirty-nine Wednesday Group members, chosen by invitation and representing a diverse range of geographical and ideological backgrounds, meet every week to discuss their ideas. The Group, whose chairman is Congressman Bill Gradison of Ohio, is supported by a professional staff that arranges seminars with leaders in the policy community, conducts research for reports on major issues, and works with the members to develop legislation.

The Group recently has issued reports on the Canadian health care system and on plans to return Social Security to pay-as-you-go financing. In addition to the ongoing infrastructure project, current work includes examinations of U.S. trade policy and access to health care for uninsured Americans.

About this Wednesday Group Report

This report was written by J. David Lashar, Wednesday Group Research Director. Editing by Carol Sorgen.

Acknowledgements: For their commentary in the preparation of this report, special thanks are extended to Michael Bell, Michael Deich, Roy R. Jones, Lance A. Neumann, Bob Oswald, Constantine Papadakis, Beth Pinkston, Cliff Winston, and Jenifer Wishart.

C L O S E

H O L D

D R A F T

REMARKS PREPARED FOR DELIVERY BY
SECRETARY OF TRANSPORTATION SAMUEL K. SKINNER
INTERNATIONAL AVIATION CLUB
WASHINGTON, D.C.
SEPTEMBER 19, 1989

If there's any constancy in the decade of the 80s, it is the word change. Anywhere you look these days you will see change -- nowhere more apparent than in the airline industry.

I want to talk to you today about two recent developments -- leveraged buyouts and foreign airline participation -- and explain why I am looking closely at the circumstances surrounding them and the potential effects, both on our airlines and on our nation.

The world's airlines are casting about for a new natural order. They justifiably are trying to match the global nature of the services they provide with a more global -- and leveraged -- approach to their corporate organization. To position themselves to become more competitive in the huge and growing world market for air services, some foreign airlines are establishing important new partnerships with carriers in other countries. Those partnerships first consisted of marketing agreements of one sort or another. Today they are beginning to take the form of formal corporate

C L O S E

H O L D

linkages. In short, foreign carriers and Wall Street have "discovered" the United States airline industry.

No one should be surprised by this development. It reflects a trend that has been evident throughout the business world for some time. Ours is increasingly a global economy, and companies of all kinds understand the importance of establishing a truly global presence. The international rules governing capital movements are being liberalized throughout the industrialized world, and the United States, like its principal trading partners, generally welcomes this trend.

But I must tell you, I do have concerns. So that there can be no doubt -- I will not allow excessive debt in the airline industry to jeopardize the public interest -- whether by diminishing the safety of air travel, or by reducing airline competition. Nor will I allow foreign interests to control United States flag carriers.

Make no mistake: I start from the very strong presumption that the marketplace knows more about the proper capitalization of business than government regulators do. And I do not intend to impede unreasonably the free flow of capital across national boundaries. Yet the threat posed by excessive debt and foreign control in the U.S. airline industry is serious

enough to warrant careful scrutiny. In large part, this threat is due to the unique nature of the airline industry. The airline industry is different for a number of reasons:

Number one, the U.S. airline industry has become highly concentrated. Today, 90 percent of the industry's traffic moves on eight carriers. If airline executives of those major carriers are forced, because of excessive debt to spin off valuable assets -- like existing aircraft, delivery orders, international routes, slots or gates -- serious competitive concerns arise.

High interest payments associated with significant debt also increase the risk that an airline will not be able to meet its financial obligations. Given the small number of major U.S. air carriers, the failure of any of these carriers could reduce the level of competition in the industry.

Even short of bankruptcy, the high cost of servicing large debt levels may also deny the airline industry the flexibility to lower fares, expand operations, modernize fleets --in other words take other steps essential to real competition. And given the barriers that appear to be

in the way of entry -- a subject that we are examining closely -- it's not easy to replace a lost competitor.

Number two, the airline industry, even though it's no longer regulated like a public utility, still has public interest responsibilities: Debt-ridden airlines, forced to adopt sweeping austerity measures, may unwittingly threaten the safety of the traveling public.

We are now detecting the extent of aircraft fatigue and corrosion problems. Airlines today cannot afford to scrimp on the new costs of maintaining the safety of their senior aircraft.

We are now discovering the technology and demand for effective noise abatement. Airlines must set aside a pool of resources to address environmental concerns.

We are now deterring the despicable acts of terrorists. Airlines cannot afford to cut back on security costs to eliminate terrorism in the skies.

These are but a few of the many public responsibilities we expect from our carriers -- and I intend to make sure they're carried out.

Number three, unlike tobacco and food companies, the airline industry is highly cyclical. For example, in 1979-80, passenger travel declined 4.3 percent and dropped another 5.6 percent in the 1980-81 period before the pendulum swung to the current growth pattern. Airlines are not recession proof. While airlines do have large cash-generating abilities, they are particularly vulnerable to economic downturns. The adverse impact of an economic downturn on airlines can only be exacerbated by heavy debt or plunges in the bond market.

Number four, in a time of a national emergency, U.S. aircraft might be needed by our country as a vital link in our protection. U. S. airlines have committed a great many aircraft to the Department of Defense through the Civil Reserve Air Fleet program. By their voluntary participation in the CRAF program, U.S. carriers provide emergency passenger and freight airlift capability in times of national crisis.

However, the success, and even the existence of the program depends on a healthy, growing, safe, well-maintained air transport system. Civil aviation is an industry that must stand ready for emergency preparedness. We rely on this industry, on its commitment to America -- and only American ownership assures that goal.

In short, for these and other reasons, the airline industry stands on a different footing than other industries. This doesn't signal a return to regulation -- I think we can all agree that everyone, especially consumers, have benefitted enormously from deregulation. What it signals is that the government must remain vigilant in carrying out its remaining oversight responsibilities.

Airlines are not conglomerates of department stores; nor are they resorts, or cookie manufacturers. Uniquely serious concerns arise when airlines cut costs, sell assets, go bankrupt or get bought by foreign interests. So long as I am Secretary, you can rest assured that I will have an eagle eye on these transactions. The interests of the American public cannot and will not be sacrificed.

As you know, the Department of Transportation has a statutory responsibility to ensure that all airlines have the financial ability to provide safe and dependable service.

Using our "continuing fitness" authority under the Federal Aviation Act, we intend to evaluate each buyout and recapitalization transaction on its own merits. We want to be absolutely certain that any carrier is financially fit enough that safety will never be compromised. If continuing fitness is called into question, rest assured that I will not hesitate to make adjustments to the airline's operating certificate.

I recognize that leveraging may enhance the flow of capital. Leveraging may enhance competitive behavior. Leveraged companies may become more efficient. Marginal operations can be streamlined and unprofitable divisions sold off, presumably to companies that can operate them more productively and profitably.

New owners and fresh management may improve the corporate image, service and operating efficiency. Because ownership of a company that has gone through a leveraged buyout is usually closely-held, the owners

can be in a better position to monitor management performance and ensure that the firm's value is maximized.

I am well aware of success stories with leveraged buyouts benefitting the national economy by promoting more productive and efficient business enterprises.

However, the downside is the growing number of stories more recently of leveraged buyouts that have gone sour. These are complicated transactions, and we must not act precipitously or arbitrarily. As you may know, I have hired the well-known accounting firm of Coopers & Lybrand to assist us in our review. I've also consulted with many leading experts on leveraged buyouts, and we have discussed this matter at length with many senior economic advisors within the Administration. The potential problems of highly leveraged transactions in the airline industry may well be addressed by alternative or complementary means.

As Secretary Brady has mentioned, one way to soften the tax code's bias toward debt and make equity more attractive is to phase out the double taxation of corporate dividends. In the meantime, the Department

of Transportation must address the issue as it has presented itself in the airline industry.

The leveraged buyout transactions include a new and important element: very large equity investments by foreign airlines. DOT has raised serious questions about the unparalleled levels of foreign investment being proposed.

Most of you are already familiar with the statutory rules governing foreign investment in U.S. airlines. The law says that the president and not less than two-thirds of the board of directors and other managing officers of a U. S. carrier must be U.S. citizens. It also says that at least 75 percent of the outstanding voting stock must be owned by U.S. citizens.

But the inquiry doesn't end there. A long line of CAB and DOT cases supports the proposition that, to enjoy the benefits of a license to engage in U.S. air transportation, an airline must be controlled in fact by U.S. citizens.

Congress, in writing the statute, had in mind the concerns about national security, and the critical role of the airline industry in maintaining our national security.

Those same concerns are at the heart of the "common law" of foreign ownership that has emerged over the years both at the CAB and now at DOT. Even where the statute's numerical ceilings have not been exceeded, we have an absolute obligation -- in keeping with legitimate considerations of national security -- to ensure that U. S. airlines remain fully within the control of U.S. citizens. But in today's complex financial transactions it's not a simple question of bumping into a numerical ceiling.

Consider that a foreign airline is willing to contribute a large share of the equity capital in return for a relatively small percentage of the voting stock, we need to examine all aspects of control. What does the foreign airline think it is buying? During the course of our review, no one factor will be determinative. Rather, we will examine, perhaps on a continuing basis, each agreement, written or oral, to get at the various indicia of control.

National security is not the only concern raised by foreign investment. The framework for international aviation -- an elaborate maze of bilateral agreements -- is unique in the annals of international business. It's an integral element in our relations with other countries.

It was designed on the assumption that, for the most part, each airline would be the airline of a particular country. Governments would bargain with each other about the opportunities available to each other's airlines, and those opportunities would be established in carefully structured, reciprocal, bilateral agreements.

When an airline of another country holds a substantial equity position in a U.S. airline, this framework can be altered radically. Suppose the United States is negotiating with another country that has a national or quasi-national airline and that airline has a director on the board of one of our airlines. Fiduciary, ethical or practical considerations may jeopardize the confidentiality of our negotiating strategy. In some circumstances, I think we would have to reconsider our practice of sharing our negotiating position with the U.S. airlines. Absent confidentiality, our bilateral negotiations could be directly jeopardized.

We have similar concerns about competition. Where two airlines of different countries are supposed to be competing, it raises the issue of their willingness to take on each other where they have overlapping ownership and boards of directors.

In other words, the prospect of foreign ownership of U.S. airlines is not troublesome on the basis of national security considerations alone. It also raises serious questions about the dynamics of the bilateral negotiating process, and about the future of competition in international aviation markets

Finally, foreign investments raise a broader issue: the shape of the future of international aviation. As I said at the outset, the rules governing the regulated market of international aviation are unique. The United States and a number of its partners have tried to introduce elements of competition into these markets, but those efforts have a long way to go.

As long as international aviation markets remain subject to this highly regulatory regime, the United States will remain unwilling to serve unilaterally as the world's laboratory for testing bold new concepts in airline globalization. To extol the virtues of a free market for the flow of airline capital without reference to the highly restricted market in which international airline services operate would be to ignore reality.

Before we allow major foreign airlines to share significantly in the considerable benefits of U.S.

domestic market, we need to know much more about the opportunities that will be made available to our carriers throughout the world, both for the provision of services and for the marketing of those services.

We need to know, for example, whether the liberalization of the internal European aviation market will translate into a net benefit or a net detriment to the U.S. carriers that seek to operate there.

We need to know whether those partners whose airlines have such faith in the investment potential of the U.S. airline industry are ready to move away, at long last, from outmoded restrictions on entry, capacity, and price.

What I am saying is that, even when the statute's numerical ceilings on foreign ownership haven't been exceeded, the Department of Transportation must consider other issues. Is there control in fact? Will the negotiating process be compromised? What happens to that airline in the event of a national emergency? Will competition be diminished? Are we unwittingly creating a one-way street for the flow of economic benefits?

DOT must review every transaction on its own merits. I have no doubt that appropriate levels of foreign investment in U.S. airlines can achieve real synergies. To repeat, it is not my intention to discourage appropriate levels of investment. But we cannot ignore the legal and international framework in which we operate, and we must know we can lie in the bed we make.

In that context, we stand ready to work together at any time with any of our trading partners, either singly or in groups.

We must work to harness the energies of change. We must remain vigilant in promoting competition and global, reciprocal access to all markets. And finally, we must never allow the financial fitness of our airlines to jeopardize safety and security.

Thank you very much.