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# PHYSICAL INFRASTRUCTURE

STRATEGIC OBJECTIVE PLAN 2000-2002





# GAO'S MISSION

GAO exists to support the Congress in meeting its Constitutional responsibilities and to help improve the performance and accountability of the federal government for the benefit of the American people.

## CORE VALUES

### ACCOUNTABILITY

describes the nature of GAO's work. GAO helps the Congress oversee federal programs and operations to ensure accountability to the American people. GAO's evaluators, auditors, lawyers, economists, public policy analysts, information technology specialists, and other multidisciplinary professionals seek to enhance the economy, efficiency, effectiveness, and credibility of the federal government both in fact and in the eyes of the American people. GAO accomplishes its mission through a variety of activities, including financial audits, program reviews, investigations, legal support, and program analyses.

### INTEGRITY

describes the high standards that GAO sets for itself in the conduct of its work. GAO takes a professional, objective, fact-based, nonpartisan, nonideological, fair, and balanced approach to all of its activities. Integrity is the foundation of reputation, and GAO's approach to its work ensures both.

### RELIABILITY

describes GAO's goal for how its work is viewed by the Congress and the American public. GAO produces high-quality reports, testimony, briefings, legal opinions, and other products and services that are timely, accurate, useful, clear, and candid.

## FOREWORD

In fulfilling its mission, GAO examines the use of public funds; evaluates federal programs and activities; and provides analyses, options, recommendations, and other assistance to help the Congress make effective oversight, policy, and funding decisions. In this context, GAO works to continuously improve the economy, efficiency, and effectiveness of the federal government through the conduct of financial audits, program reviews and evaluations, analyses, legal opinions, investigations, and other services. Most of this work is based upon original data collection and analysis.

To ensure that GAO, in serving the Congress, targets the right issues, provides balanced perspectives, and develops practical recommendations, GAO regularly consults with the Congress and maintains relationships with a variety of federal, state, academic, and professional organizations. GAO also obtains the perspectives of applicable trade groups and associations and attends professional conferences. Moreover, GAO regularly coordinates its work with that of CRS, CBO, and agency Inspector General offices. Throughout, GAO's core values of accountability, integrity, and reliability are guiding principles.

In keeping with its mission and responsibilities, GAO has developed a strategic plan that includes four strategic goals and 21 related strategic objectives. To ensure that GAO's resources are directed to achieving its goals, a separate strategic plan underlies each objective. In support of GAO's goal of providing timely, quality service to the Congress and the federal government to address current and emerging challenges to the well-being and financial security of the American people, this strategic plan describes the performance goals GAO will use in supporting congressional and federal decisionmaking on a safe and efficient national physical infrastructure

This plan represents a 3-year planning period; however, because unanticipated events may significantly affect even the best of plans, our planning process allows for updating this plan to respond quickly to emerging issues. If you have questions or desire information on additional or completed work related to this strategic objective, please call or e-mail us or the contact persons listed on the following pages.

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# SERVING THE CONGRESS

## GAO'S STRATEGIC PLAN FRAMEWORK

### MISSION

GAO exists to support the Congress in meeting its Constitutional responsibilities and to help improve the performance and accountability of the federal government for the benefit of the American people.

### GOALS

PROVIDE TIMELY, QUALITY SERVICE TO THE CONGRESS AND THE FEDERAL GOVERNMENT



TO ADDRESS CURRENT AND EMERGING CHALLENGES TO THE WELL-BEING AND FINANCIAL SECURITY OF THE AMERICAN PEOPLE

SUPPORT THE TRANSITION



TO RESPOND TO CHANGING SECURITY THREATS AND THE CHALLENGES OF GLOBAL INTERDEPENDENCE

MAXIMIZE THE VALUE OF GAO



BY BEING A MODEL ORGANIZATION FOR THE FEDERAL GOVERNMENT



TO A MORE RESULTS-ORIENTED AND ACCOUNTABLE FEDERAL GOVERNMENT

### THEMES

Demographics

Globalization

Quality of Life

Security

Technology

Government Performance and Accountability

### OBJECTIVES

Health care needs and financing  
Retirement income security  
Social safety net  
Education/workforce issues  
Effective system of justice  
Community investment  
Natural resources use and environmental protection

**PHYSICAL INFRASTRUCTURE**

Diffuse security threats  
Military capabilities and readiness  
Advancement of U.S. interests  
Global market forces

Fiscal position of the government  
Government financing and accountability  
Governmentwide management reforms  
Economy, efficiency, and effectiveness improvements in federal agencies

Client relations  
Strategic and annual planning  
Human capital  
Core business and supporting processes  
Information technology services

### CORE VALUES

**Accountability**

**Integrity**

**Reliability**

PROVIDE TIMELY,  
QUALITY SERVICE TO THE  
CONGRESS AND THE  
FEDERAL GOVERNMENT



TO ADDRESS  
CURRENT AND EMERGING  
CHALLENGES TO THE  
WELL-BEING AND  
FINANCIAL SECURITY  
OF THE  
AMERICAN PEOPLE

Health care needs and financing  
Retirement income security  
Social safety net  
Education/workforce issues  
Effective system of justice  
Community investment  
Natural resources use and environmental protection  
**PHYSICAL INFRASTRUCTURE**

## A SAFE AND EFFICIENT NATIONAL PHYSICAL INFRASTRUCTURE

The nation's economic vitality and the safety of its citizens are influenced to an important degree by the soundness of its physical infrastructure (highways, bridges, federal facilities, schools, hospitals, drinking water and wastewater facilities, etc.). In particular, transportation and telecommunication systems provide the superstructure on which the nation's economic engine depends, facilitating the movement and manufacture of goods and ideas. Furthermore, safe drinking water and waste treatment systems are essential. Finally, a critical element in providing federal government services to the American public is the thousands of federal buildings that serve as workplaces for federal employees or that otherwise support defense, research and development, and foreign policy missions or house historic cultural and artistic artifacts.

The nation's infrastructure is under considerable stress. Many elements are aging, and some are buckling under current demands. The American Society of Civil Engineers has estimated that more than \$1 trillion in infrastructure construction or maintenance will be needed over the next 5 years. While we have not confirmed this estimate, it seems likely that the nation's total needs may exceed what we can afford. It is therefore essential that government at all levels make well thought out decisions about how to allocate funds among competing priorities, determine which projects to undertake, and finally build these projects as efficiently as possible. How government responds to this challenge poses important consequences for our nation's future.

GAO's strategic plan identifies seven multi-year performance goals to support congressional and federal decisionmaking on a safe and efficient national physical infrastructure. The following pages discuss the significance of the performance goals, the efforts that will be undertaken, and the potential outcomes.

### *Performance Goals*

- Identify the Full Range of Infrastructure Investment Needs and Spending Trends at the Federal, State, and Local Levels; Best Practices; and Potential Solutions for Improved Decisionmaking on Infrastructure Investments
- Assess Alternative Methods for Financing Transportation Projects
- Analyze the Environmental and Economic Impact of Transportation Facilities on Surrounding Communities and Alternatives for Reducing Congestion and Delays
- Assess the Investments Required to Meet Federal Safe Drinking Water and Wastewater Treatment Standards and the Alternatives for Cost-Effectively Maintaining, Repairing, and Replacing Communities' Drinking Water, Wastewater, and Solid Waste Infrastructure
- Assess DOT's Efforts to Reduce Accidents, Injuries, and Fatalities in All Transportation Modes
- Assess Amtrak's Financial Viability
- Assess the Cost-Effectiveness of Upgrading and Maintaining the Nation's Federal Buildings and Facilities



## *Identify the Full Range of Infrastructure Investment Needs and Spending Trends at the Federal, State, and Local Levels; Best Practices; and Potential Solutions for Improved Decisionmaking on Infrastructure Investments*

### *Significance*

Reports about the condition of the nation's infrastructure are disturbing. The Department of Transportation estimates that nearly \$80 billion per year will be needed through 2015 to maintain and improve the nation's 3.9 million miles of roads and streets and the bridges that they cross. Even though the Congress has appropriated more than \$25 billion to modernize our air traffic control system, cost overruns, schedule delays, and missed performance goals have eroded confidence in the Federal Aviation Administration's ability to manage this critical program. The Environmental Protection Agency estimates that a minimum of \$277 billion will be needed over the next 20 years to renew the nation's water supply and wastewater treatment systems. Additionally, various studies, panels, task forces, and commissions have cited problems of excess capacity and poor maintenance at the nation's over 500 federal laboratories. Finally, the American Society of Civil Engineers gave the nation's infrastructure systems (including those for transportation, drinking water and wastewater, and schools and hospitals) a grade of "D" and estimated the 5-year cost of addressing their needs at over \$1 trillion. Determining the optimum level of infrastructure investment in light of competing demands for federal dollars will be a key challenge for federal decisionmakers in the coming years.



### *Key Efforts*

Determine the condition of the nation's infrastructure systems (transportation, drinking water and wastewater, schools and hospitals, and federal laboratories) and the level of spending for these systems by all levels of government and assess potential solutions to address deficiencies

Assess the costs, schedules, and financial management of major infrastructure improvement projects, including those for air traffic control modernization and mass transit

### *Potential Outcomes*

A more informed basis for the Congress to assess infrastructure conditions, needs, and costs

Improved management of air traffic control modernization and other infrastructure projects



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## *Assess Alternative Methods for Financing Transportation Projects*

### *Significance*

While the amount of funds that will be available to address future transportation needs is unknown, costly infrastructure projects will need to compete with other spending priorities such as Social Security, health care, and national defense, thereby posing tough decisions for the Congress. Alternative and innovative funding strategies for transportation projects could help leverage federal funds and promote public-private partnerships to address a wider range of infrastructure needs than would be feasible with more traditional funding mechanisms.



### *Key Efforts*

Evaluate innovative financing strategies, such as the new \$10.6 billion federal transportation loan program, for funding major highway, bridge, and transit projects

Assess the impact of proposals to change the financing of aviation programs

### *Potential Outcomes*

Objective, balanced, fact-based information on the issues and alternatives associated with financing transportation infrastructure programs and leveraging federal, state, and private industry funds

A clear basis for decisionmaking by the Congress and the administration on options for financing aviation programs



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## *Analyze the Environmental and Economic Impact of Transportation Facilities on Surrounding Communities and Alternatives for Reducing Congestion and Delays*

### *Significance*

Americans are spending more time stuck in traffic than ever before, and aviation delays are increasing. Projections for the future are not promising. Economic growth in the suburbs is imposing demands on the nation's transportation systems that are now generally oriented toward moving people to and from urban centers, rather than from suburb to suburb. Proposals to address congestion by expanding transportation facilities often meet with vigorous opposition. For example, proposals to increase flights at airports encounter community opposition because of the anticipated noise. Proposals to expand or build new highways raise concerns over increased local feeder traffic, reduced green space, bisected communities, and damage to environmentally sensitive wetlands. Subway construction can cause lengthy disruptions of neighborhoods, and local traffic can increase near subway stations, just as it does near highways. Efforts to improve water transportation by dredging shipping channels raise controversy over where to dump the dredged material. Also, large supertankers and the expanded terminals needed to service them pose risks of oils spills and other pollution that can devastate pristine shorelines.



### *Key Efforts*

Assess methods by which coordination between economic growth and transportation planning can be improved

Assess alternative transportation technologies—such as high-speed rail, mass transit or Intelligent Transportation Systems—that could address congestion while minimizing the negative environmental impact

### *Potential Outcomes*

Objective information and options that federal and local officials can consider as they debate economic, transportation, and environmental issues when planning for economic development

Support to the Congress as it evaluates the extent to which various transportation proposals would alleviate congestion





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## *Assess the Investments Required to Meet Federal Safe Drinking Water and Wastewater Treatment Standards and the Alternatives for Cost-Effectively Maintaining, Repairing, and Replacing Communities' Drinking Water, Wastewater, and Solid Waste Infrastructure*

### *Significance*

The federal, state, and local investment in our national drinking water, wastewater, and solid waste disposal infrastructure has been substantial. For example, since the 1970s federal, state, and local investment in the nation's wastewater infrastructure has been approximately \$250 billion. While these capital investments have improved water quality and have helped protect public health, environmental challenges remain along with ongoing questions about the most appropriate federal role. These issues will need to be examined by the Congress in reauthorization deliberations concerning key laws, including the Clean Water and Safe Drinking Water Acts. In particular, potentially thousands of people nationwide are still at risk from contaminated drinking water, and many wastewater treatment facilities remain in need of repair. According to EPA's 1996 wastewater infrastructure needs survey, over \$139 billion will be needed to address wastewater capital needs through 2016. The agency's drinking water needs survey estimates that the nation's 55,000 community water systems (serving 243 million people) will need a minimum of \$138 billion for infrastructure improvements, the largest of which is the installation and rehabilitation of water transmission and distribution systems intended to protect the public from contaminants that can cause acute illness. Solid waste management also continues to be a major public concern as Americans annually generate billions of tons of solid waste. Since the mid-1980s, the nation has experienced significant changes in how it manages municipal solid waste, with both the public and private sectors playing pivotal roles-including the federal government through its establishment of landfill standards, setting of incinerator and landfill emission standards, and promotion of recycling efforts. Numerous unresolved solid waste management issues remain, including complex public policy and management issues associated with increases in interstate waste shipments.



### *Key Efforts*

Examine the key factors underlying the expressed needs of community drinking water systems and wastewater treatment facilities

Assess existing and innovative government and private-sector options for financing and managing drinking water and wastewater treatment infrastructure

Analyze funding and management issues associated with solid waste disposal and potential federal response options

### *Potential Outcomes*

Increased congressional confidence in the data and factors underlying the current and projected conditions of community drinking water and wastewater facilities in support of the Congress's reauthorization of the Clean Water and Safe Drinking Water Acts

Support for congressional analysis and oversight in the development of national strategies to address drinking water, wastewater treatment, and waste disposal needs

Improved EPA financing strategies and more cost-effective management approaches in addressing drinking water, wastewater treatment, and waste disposal needs

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## *Assess DOT's Efforts to Reduce Accidents, Injuries, and Fatalities in All Transportation Modes*

### *Significance*

Transportation safety is a major concern. In 1997, someone in the United States died in an alcohol-related motor vehicle crash every 32 minutes. The number of people who died in crashes involving large trucks increased by 20 percent between 1992 and 1997, while the miles traveled by these trucks continued to increase. The Department of Transportation states that the 42,000 fatalities and 3 million injuries on highways each year cost the nation about \$165 billion annually. While the commercial and general aviation accident rates have not increased in recent years, they must be reduced. The 340 lives lost in 1996 in just two commercial aviation accidents and the 600 annual fatalities in general aviation underscore the importance of continuing vigilance in aviation safety. Unless the current accident rate is reduced, given projections for increased travel over the next 20 years, we could see a major aviation disaster every week. While the railroad industry has posted modest improvements in safety, over 1,000 people died in railroad-related accidents in 1998, most of which occurred at highway-rail crossings or when people trespassed on railroad property.



### *Key Efforts*

Assess the extent to which federal safety oversight focuses on correcting the root causes of transportation accidents

Evaluate the quality and usefulness of transportation safety data and the trends that they disclose

### *Potential Outcomes*

A better understanding of the root causes of transportation-related accidents, injuries, and fatalities and their related societal costs to aid the Congress in identifying potential solutions

Improved data measures that highlight the root causes of transportation safety problems



## *Assess Amtrak's Financial Viability*

### *Significance*

Since Amtrak began operations in 1971, the federal government has provided it with over \$23 billion in capital and operating subsidies. Like other passenger rail systems outside the United States, Amtrak has never been profitable. In 1998, the railroad had its largest net loss (expenses minus revenues) in 10 years and lost nearly two dollars for every dollar of revenue that it earned from its core intercity passenger services. In 1997, one out of three routes lost more than \$100 for every passenger. Only one route—Metroliner high-speed service between Washington, D.C., and New York City—has turned a profit. Ridership in many areas is light: In 13 states, fewer than 100 passengers, on average, boarded an Amtrak train in a given day in 1997. To improve its financial performance, Amtrak, citing its mission to maintain a national route system, has sought growth opportunities rather than reductions in service. Amtrak views providing higher-speed service in selected corridors outside the Northeast as an important component of its growth strategy. Amtrak has been working with state and local officials and with the freight railroads that own the tracks to remove impediments to higher train speeds. At the request of the administration and the direction of the Congress, Amtrak has pledged to eliminate the need for federal operating subsidies by 2002. If Amtrak continues to require federal operating subsidies after that date, the Amtrak Reform and Accountability Act of 1997 provides for the Congress to consider either restructuring or liquidating the railroad. However, Amtrak has made relatively little progress in reducing its need for federal operating subsidies and must make five times as much progress in the remaining 4 years until 2002 as it has made over the previous 4 years. Our analysis indicates that Amtrak is unlikely to eliminate the need for federal operating subsidies by the end of 2002.



### *Key Efforts*

Monitor Amtrak's progress in improving its financial viability

Assess the extent to which high-speed rail proposals may provide opportunities for Amtrak to improve its financial position

### *Potential Outcomes*

Fact-based, up-to-date information on Amtrak's financial position and its continuing need for federal operating assistance in support of congressional decisionmaking

An informed basis for the Congress to consider high-speed rail proposals and their impact on Amtrak's financial position



## *Assess the Cost-Effectiveness of Upgrading and Maintaining the Nation's Federal Laboratories*

### *Significance*

Each year, the federal government spends billions of dollars to carry out research and development activities at over 500 federal and national laboratories. These laboratories have historically made significant contributions to developing new products and maintaining U.S. leadership in world markets. However, much of this infrastructure, which includes facilities and their associated equipment, are old and outdated, necessitating decisions about which to dismantle and which to replace, upgrade, renovate, or repair. In this connection, various studies, panels, task forces, and commissions have cited problems of excess capacity, poor maintenance, duplicative research, and the failure of the federal R&D establishment to adapt missions and programs to the changing world environment. The Results Act and other new strategic planning efforts offer opportunity to provide information and analysis that should prove useful in determining whether all the laboratory facilities are, in fact, needed and worthy of renovation and repair and whether some of them can be realigned, consolidated, closed down, or better structured and managed to serve the nation's purposes.



### *Key Efforts*

Identify options for restructuring and better managing DOE's national laboratories, built in the past, that will be needed to serve new future changing missions

Assess the conditions, needs, and costs of renovating, repairing, and properly maintaining our nation's federal laboratory infrastructure

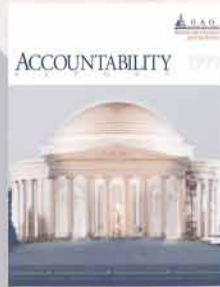
### *Potential Outcomes*

More informed consideration of the missions of DOE's national laboratories and of these missions' consistency with congressional priorities

Objective, fact-based support for congressional decisionmaking on the cost-effectiveness of the present laboratory structure and on the feasibility of consolidating or closing down some of the laboratories



*The full set of GAO's strategic planning, performance, and accountability documents are listed below. All of these documents, as well as other GAO reports and documents, may be obtained electronically on our website, [www.gao.gov](http://www.gao.gov).*



**Accountability Report for fiscal year 1999**

**Strategic Plan, 2000-2005**

*Strategic Plan Executive Summary*

*Strategic Plan Framework*

**Strategic Objective Plans**

*Health Care Needs and Financing*

*Retirement Income Security*

*Social Safety Net*

*Education/Workforce Issues*

*Effective System of Justice*

*Community Investment*

*Natural Resources Use and Environmental Protection*

*Physical Infrastructure*

*Diffuse Security Threats*

*Military Capabilities and Readiness*

*Advancement of U.S. Interests*

*Global Market Forces*

*Fiscal Position of the Government*

*Government Financing and Accountability*

*Governmentwide Management Reforms*

*Economy, Efficiency, and Effectiveness*

*Improvements in Federal Agencies*

*Maximize the Value of GAO*

**Performance Plan Fiscal Year 2001**



# PHYSICAL INFRASTRUCTURE

STRATEGIC OBJECTIVE PLAN

2000-2002