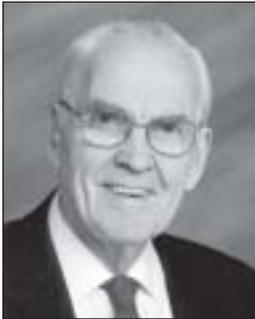


RETROREFLECTIONS AND FUTURE DIRECTIONS



Voorhees

Reaching into Cities

ALAN M. VOORHEES

Urban transportation planner; past Chair, TRB Executive Committee (1972); deceased December 2005

Working at the Automotive Safety Foundation in 1955, I heard from various sources that the Interstate program did not have the support of local governments because they did not know what they were going to get. There were no plans for Interstates in urban communities.

Then I was asked to find some cities that had freeway plans and to estimate the cost of building the Interstate in urban areas. No city had good plans, but we did develop an estimate for urban areas. The original proposal was for \$70 billion—we doubled that, and the bill was passed overnight.

The Sagamore conference in New York was the first in a series that started the development process for planning the Interstate system in urban areas. The conferences were cosponsored by the Bureau of Public Roads, the Highway Research Board, and the American Municipal Association and focused on highways and urban planning after the passage of the transportation reauthorization bills. The plans developed in the conferences, however, often did not match up with the plans that had been used for the cost estimates.

Moving Toward Sustainability

JOSEPH M. SUSSMAN

JR East Professor of Civil and Environmental Engineering, Massachusetts Institute of Technology, Cambridge; past Chair, TRB Executive Committee (1994)

Asked about the impact of the French Revolution, Henry Kissinger famously said, “It’s too early to tell.” Perhaps it is too early to tell about the Interstate system, too.

There is no question about the extraordinary role of the Interstate in the United States and the world. The Interstate is a product of the U.S. agenda for economic growth, implemented at the close of World War II, when political leaders were concerned that the nation would fall back into the economic depression of the 1930s.

The idea was to invest in highway transportation—and to an extent, in air transportation—to enable a substantial period of economic growth. In this, the

Interstate has been a success. Sustained economic growth has been a primary characteristic of the United States during the last half of the 20th century and into the 21st.

But the Interstate also has planted the seeds for the explicit consideration of sustainability as the overarching design consideration for the transportation system of the future. Sustainability entails balancing equitable economic growth and development with stewardship of the environment. The sustainability movement in the United States has roots in the social movements that protested against the negative impacts of the Interstate—the “stop the highways” movements in San Francisco and Boston are two examples.

Mobility and economic growth remain critical U.S. policy objectives, even with the close of the Interstate era. But the Interstate also has laid the groundwork for sustainable transportation as a policy objective within a framework of sustainable development for the United States and perhaps the world. Its full impact is still to be seen.

Freedom and Transformation

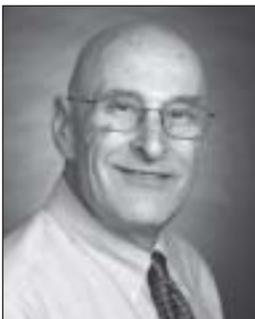
E. DEAN CARLSON

President, Carlson Associates, Topeka, Kansas; former Executive Director, Federal Highway Administration, and former Secretary, Kansas Department of Transportation; past Chair, TRB Executive Committee (2002)

In 1956 I was working for the Nebraska Department of Roads on a route study of Interstate 80 from Grand Island to North Platte to decide which side of the Platte River would be most suitable. A friend who was interested in right-of-way activities asked me to keep him posted on the outcome. I did not do that, because I wanted no part in land speculation.

But that friend also was certain that the Interstate would have the most dramatic impact on the landscape and the economy since the building of the railroads. I thought then he might be exaggerating, but after 50 years I think he underestimated the impacts.

The impact of the Interstates has exceeded that of the railroads or of any other innovation in transportation because the system brought freedom to the individual. It is hard to imagine America without the Interstate system. I am pleased to have worked for 50 years in helping to achieve the transformation that the system made possible.



Sussman



Carlson

Building Block for Innovation

WILLIAM L. GARRISON

Professor Emeritus, Civil and Environmental Engineering, University of California, Berkeley; past Chair, TRB Executive Committee (1973)

The Interstate was a latecomer to the automobilization story that goes back to the highway improvement programs of the 1910s and 1920s. Did the Interstate distort, as well as augment, a story already well along? Did the Interstate system serve as a model for federal programs that use the we-will-withhold-your-money-unless-you-do-what-we-say style of exerting power? Those questions deserve answers, but here are responses to the questions of where we are and what to do.

Congestion is increasing. Capacity increases too often require breathtakingly high costs and are easily resisted by those who are affected adversely—unless substantial amounts of money are bled for mitigation. Consequently, efficient traffic operations and facility preservation are priorities, as is financing. Fuel and related taxes are hammered by escalating costs, and funds are siphoned by the highway-funds-as-cash-cow attitudes and actions of those who divert funds to other purposes.

What to do? Experience shows that legacy systems can suffocate new systems but also can be replaced by new systems. The Interstate may provide a building block for innovation—the new is built partly from old building blocks, as the economist Joseph Schumpeter observed in 1934. Also available are cadres of highly skilled and professional actors and agencies—that is, the highway establishment. The Interstate therefore may be in the recipe for improved services and improved futures, instead of a deadweight in a dynamic economy.

Experience and logic say that discovery beats prescription every time. Exploration to match new combinations of facilities, vehicles, and operations to markets may establish the Interstate's role in creating opportunities to do old things in new ways and to do new things—that may be the road to improved futures.

Strategic Advantage in the Global Marketplace

T. R. LAKSHMANAN

Director, Center for Transportation Studies, Boston University

The Interstate Highway System, constructed at a total cost of \$58.5 billion (in 1957 dollars) was a wise public investment, with major transformational impacts on the economy, society, and lifestyles of the United States.

The Interstate highways have spawned a variety of economic effects: for highway users, increased mobility and time savings; for consumers, a larger shopping selection and lower average consumer prices; and for firms, lower assembly and delivery costs, the capacity to consolidate production and distribution sites and to expand outputs, and reductions in inventory costs to just-in-time levels.

Studies for the U.S. Department of Transportation suggest that highways accounted for 25 percent of the national productivity increases in the American economy between 1950 and 1989. Aided by the Interstate system and the contemporaneous advent of jets and containers, firms expanded their markets, knitting together and economically developing the far-flung regions of the country, creating an integrated, nationally sourced and coordinated production system by the early 1980s.

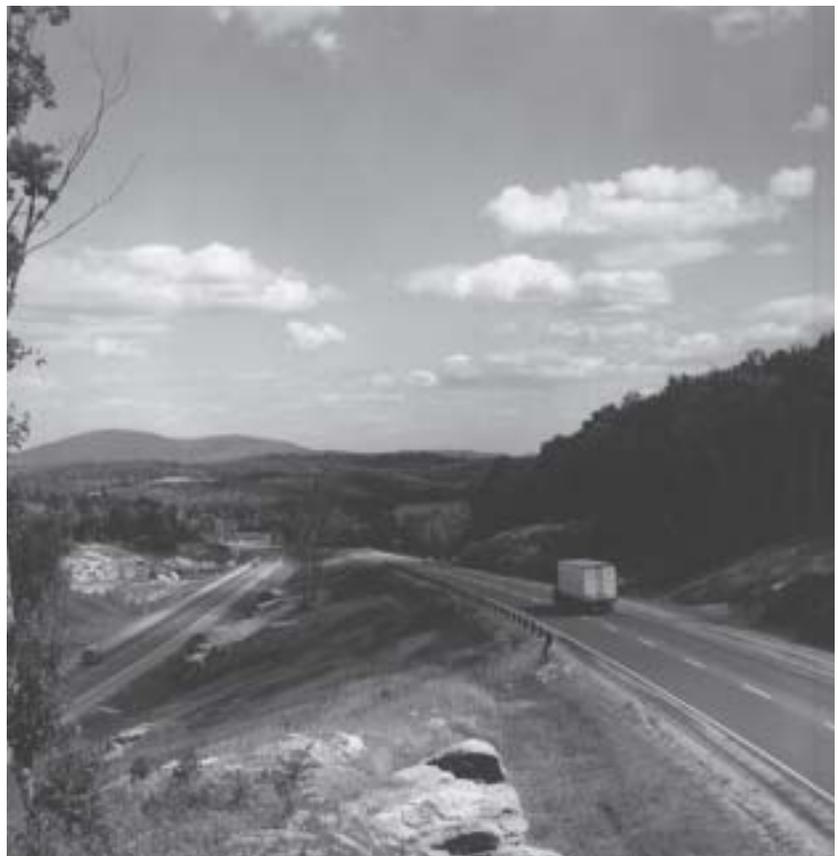
In recent decades, with the globalization of the American economy, the transportation infrastructure has been important to the competitiveness of U.S. firms, enhancing U.S. trade and augmenting industrial productivity with logistical savings, locational flexibility, and economies of scale in the provision of public capital. These characteristics have added production value and strategic advantage to U.S. firms in the global marketplace.



Garrison



Lakshmanan





Borrone

Renewing the Commitment to Road Safety

LILLIAN C. BORRONE

Chairman, Eno Transportation Foundation; former Assistant Executive Director, Port Authority of New York and New Jersey; past Chair, TRB Executive Committee (1995)

One of the Interstate Highway System's most important achievements in the past 50 years has been its crucial role in deepening the national commitment to making travel on America's highways safer and more efficient.

The system was a landmark in safety engineering, producing new highways designed to offer reasonable road safety at speeds of up to 75 miles per hour. Moreover, as the system encouraged mobility, it helped to raise awareness about the need for more safety measures.

Ten years after the legislation that created the Interstate system, Congress passed the National Traffic and Motor Vehicle Safety Act. Seat belts became standard equipment. Padded dashboards, air bags, collapsible steering wheels, children's car seats, and other improvements followed.

William Phelps Eno, the "father of traffic safety," would be proud of these achievements, but he also would have recognized that transportation professionals concerned about safe mobility have much work to do. With more than 42,000 people losing their lives on the nation's highways each year, the commemoration of the Interstate system's 50th anniversary should renew the commitment to developing and promoting better road safety policies and technologies.

Boundless Benefits—But Some Negative Impacts

THOMAS B. DEEN

Consultant; former Executive Director, TRB (1980–1994)

The Interstate system was one of the largest public works projects of all time. Given its geographical extent over our vast decentralized country, the system was a triumph of concept, engineering, planning, administration, and finance. Its impacts since its completion have been equally vast and comprehensive, extending into every aspect of society, whether geographic, economic, social, or political.

Most Americans accept these generalities, but there is less consensus about whether the impacts have been, on balance, primarily positive. This is in sharp contrast to the flow of positive impacts that were expected after the passage of the Federal-Aid Highway Act of 1956, which set the program in motion.

I had just taken my first job that year after finish-

ing my schooling. Working for the mayor of a medium-sized city that was choking on its growing traffic, I strongly believed—along with my professional colleagues—that a major expansion of the highway system would be an unmitigated good.

We—and most of the public—believed that we could make better cities by routing the new roads through slum areas, using excess lands to build new neighborhoods, and expanding economic opportunities. Little did we know of the problems of displaced families, disrupted neighborhoods, negative environmental impacts, environmental justice, or the impending problems with energy supplies.

Today I have not changed my views that the Interstate was a boundless benefit to America, but I also acknowledge that some negative impacts are part of its legacy. Any new transportation program that includes urban areas will have to accommodate a public that is more sensitive to environmental, energy, and development concerns than people were a half century ago. A better understanding of both the positive and negative impacts will be required.



Assembling a Bold New Vision

DANIEL L. DORNAN

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For me as a baby boomer born in the early 1950s, the Interstate Highway System was what the U.S. space program would become in the 1960s—a massive and highly visible infrastructure initiative that reflected the highest vision, technology, and capabilities of the nation.

The Interstate system was instrumental in distributing much of the urban population away from the central cores of congested cities, which were vulnerable to nuclear attack. In doing so, the Interstate system launched one of the greatest voluntary population relocations in the history of the world, as urbanites flocked to the urban fringes and created a new urban form called the suburb. This stimulated economic development—pent up since the end of World War II—along the Interstate corridors.

The Interstate system permitted prompt mobilization of civil defense and military resources for domestic or international emergencies. The system was a major boost to the motor carrier industry, leading to greater modal competition in the surface freight industries and to the deregulation of the railroad and trucking industries in the 1970s and 1980s. Interstate highways became the primary surface transportation arteries for moving people and goods across the United States.

In celebrating the accomplishments of the generation that envisioned and built what many consider to be one of the wonders of the modern world, this generation faces the daunting task of preserving and expanding the Interstate system to meet the needs of the next generation. With limited funding and many institutional impediments, the challenge is to assemble a bold new vision that will capture the nation's imagination, apply the latest technologies, and serve as a testament to what the United States can achieve when it pulls together for the common good.

This will require retooling the entire program to accommodate program diversity and competition, innovative funding and project delivery, and the flexibility to apply best practices in funding, financing, operating, and managing these critical infrastructure assets. As a major competitor in the global economy, the United States can adapt the program and thrive, or it can resist change and wither. We owe it to the previous generation to extend their vision and to the next generation to enable theirs.

The humorist Will Rogers once said that the cause of congestion in America is that government agencies build the roads and private companies build the cars. Cars are produced in a competitive marketplace and sold to customers who select the best value. Roads generally are built by government agencies as a public monopoly and treated as sunk costs, so that the level of service is a function of unbridled demand. To move forward, the Interstate system needs to become more competitive in its service offerings, introduce pricing in the most congested urban areas, and provide the necessary resources and methodologies to preserve its long-term future.

Will Rogers also quipped: "I'll tell you how to solve Los Angeles' traffic problem. Just take all the cars off the road that aren't paid for." This is how the United States traditionally has treated the building of roads under the Federal-Aid Highway Program—begin development only when funds are available to pay in full. The U.S. highway program needs to transition from a Soviet-style program to a capitalist-style enterprise.



Dornan





VISION, INSPIRATION, AND PERSEVERANCE

Concluding Thoughts

ALAN E. PISARSKI

The author, a transportation consultant in Falls Church, Virginia, is Chair of the TRB History Committee and of the Data and Information Systems Section. He also chairs the National Cooperative Highway Research Program Project Panel on Using American Community Survey Data for Transportation Planning.

Among my earliest recollections of the Interstate was when I was working part-time for a construction firm while still in college. The firm was part of the consortium building the Long Island Expressway (LIE), and I got to drive on it each morning on the way to work, months before it opened to the public—probably the last time anyone drove the LIE at the speed limit in the peak hour.

The 50 years we are celebrating mark the anniversary of the funding plan for the Interstate, passed in the Federal-Aid Highway Act of 1956. That funding plan put the Interstate program on the map. The concept and the plan had been around for at least 20 years, and something like an official map dated back to 1944.

This celebration gave me the opportunity to read



President Dwight D. Eisenhower in the Oval Office.

in full two of the great works of our profession: *Toll Roads and Free Roads* from 1939 and *Interregional Highways* from 1944. These documents are a revelation. Both reports should be made more available, and both should be read by people in our profession. Republishing these documents would expand the understanding of all members of our profession.

The books are largely the product of the genius of one man, Herbert S. Fairbank, for whom the Turner-Fairbank Highway Research Center is partly named. For many decades Fairbank was the right hand of the Chief of the Bureau of Public Roads Thomas H. MacDonald. Some still around today participated with Fairbank in that work and deserve our recognition and our thanks.

Genius and Persistence

But the Interstate required another kind of genius—a genius for inspiring people to do great things, a genius for organizing and setting challenges and then achieving them. That was the genius of Dwight David Eisenhower. The word genius and Eisenhower do not usually appear in the same sentence. Like many others, I saw two Eisenhowers—the hero of the “Crusade in Europe” and the avuncular character who became President 10 years later. Yet his genius for

