

America's Highways: Planning for the Next 50 Years

BY RICHARD PRENTICE, P.E.



It is hard to imagine traveling throughout the U.S. without the benefit of the Interstate Highway System.

In the early 1900s, travel in America was difficult because roads were just dirt, and when it rained, mud. To dramatize the poor state of America's roads, an Army convoy traveling from Washington, D.C., to San Francisco experienced everything that was wrong with the nation's highways. Almost two-thirds of the 3,000-mile trip was made over dirt, mud, and sand roads. Many trucks skidded off the narrow roads or got mired in mud or quicksand. Others fell through bridges that had been designed for horse and buggy traffic, not the weight of motorized vehicles. It took 56 days for the Army to complete its transcontinental journey, and it was the roads, not the vehicles, that had limited the convoy's progress.

The Bureau of Public Roads realized that a unified highway system was necessary. Most roads had been developed for local movement, not transcontinental travel. These roads followed existing Indian and cattle trails, as well as arbitrary lines drawn on a map. The variously named highways each had their own colored signs, and the haphazard placement of these signs caused much confusion for the nonlocal traveler. The Federal Aid Highway Act of 1925 created the U.S. Highway System, which developed a national standard for America's existing highways. Its goal was to sign major roads with numbered shields that would be nationally recognized by highway travelers. These routes, including the famous Route 66, now enabled the quick, easy movement of people, farm products, and manufactured goods.

The 1929 stock market crash and the Depression that followed spurred federal and state governments to become even more involved in rebuilding America's highways. The federal government backed up its commitment to the nation's highways by rewriting the Federal Aid Highway Act. The

revised Act directed the Bureau of Public Roads to explore the feasibility of building six multiple-lane transcontinental highways, but the following year World War II broke out.

After the attack on Pearl Harbor, the U.S. government restricted the nation's road-building efforts to only defense-related projects. While in Europe during World War II, General Eisenhower viewed the ease of military movement on the German autobahns. This, coupled with his harrowing transcontinental convoy experience in 1919, convinced him that a good highway system was essential to a strong national defense.

In 1952, Eisenhower was elected president. He told Congress that our highway network was obsolete and that we needed a safe, fast network of highways that would connect our cities and also ensure our national defense. President Eisenhower proposed to

business and pleasure. The industry's hard work got us to where we are today, but the challenge we now face is to restore and maintain this mobility.

Two major issues need to be addressed: aging infrastructure and increasing traffic volumes. Approximately 65% of the interstates' pavements are rated from fair to poor, and more than 6% of the bridges are structurally deficient. The highway industry is working closely with materials experts, structural engineers, and the Federal Highway Administration to improve pavement design, find better ways to build bridges, and develop advanced maintenance techniques. Today, there are over 200 million automobiles in the U.S., so it's safe to say that our interstate highways carry well beyond the limits they were designed for. Environmental laws will not allow

Today, there are over 200 million automobiles in the U.S., so it's safe to say that our interstate highways carry well beyond the limits they were designed for.

Congress a \$50 billion highway program to be completed in 10 years. In actuality, it took 50 years and \$450 billion to construct the interstate's 46,837 miles of highways, 55,512 bridges, and 104 tunnels.

On June 29, our Interstate Highway System marked its 50th Anniversary. But the golden anniversary needs to be more than just a celebration—we need to look forward and plan for the future. Eisenhower's Interstate Highway System has played an important role in the nation's economy and quality of life, but the system requires renewed investment. Many portions of the interstate network are strained to capacity. Our economic activity is being diminished by increasing delays, but this should not be surprising because the interstate highways were built to accommodate 20 years of traffic growth. By 1995, 90% of the system was 20 years old or older.

The single goal of the highway industry has always been to provide mobility for

endless widening of these highways, so other solutions are needed.

It's now the 21st century, and I know that modern technology will bring great advancements to transportation, but the highway industry must stay focused on the infrastructure. America's wonderful system of roads is aging and needs to be maintained until it is no longer needed. We have come a long way in the last 50 years. This happened because of Dwight Eisenhower's vision. In order to make comparable strides over the next 50 years, we need a new vision. Hopefully, there is a visionary among us to point in the right direction.

Richard Prentice, P.E., is the president of the American Society of Highway Engineers. He has worked in the highway industry for 38 years. Prior to joining McMahon Associates Inc. in Fort Washington, Pennsylvania, he worked for 36 years at the Pennsylvania Department of Transportation.