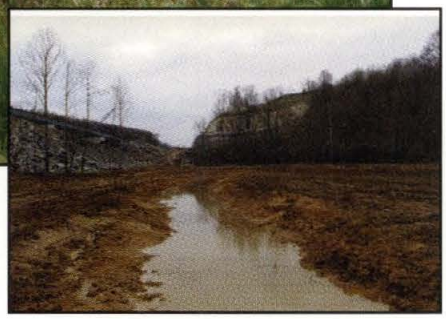
HUMAN AND NATURAL ENVIRONMENT

The environment, both human and natural, has become as important a consideration in highway construction as the highway itself. Today, each new or reconstruction project must undergo and pass a rigorous series of examinations, often involving other government agencies such as the Department of the Interior, the Army Corps of Engineers and the Environmental Protection Agency (EPA).

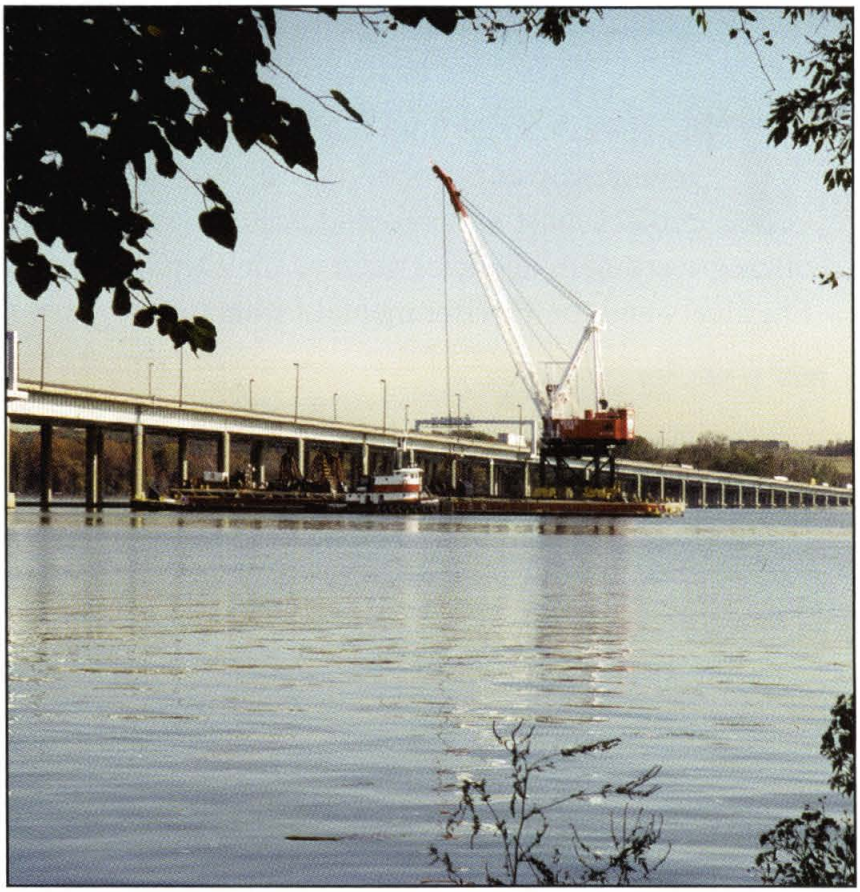
The Appalachian Corridor H Highway Project in Upshur County, West Virginia, included many areas of wetlands that were in danger of extinction because of construction. The Sand Run wetland was restored by first planting mixed grasses that would attract wildlife. Later, landscaping provided more trees and shrubs that proved irresistible to a family of beavers, who ultimately reshaped the wetland to their own specifications.



Here's the Sand Run wetland after the highway was built but before restoration.

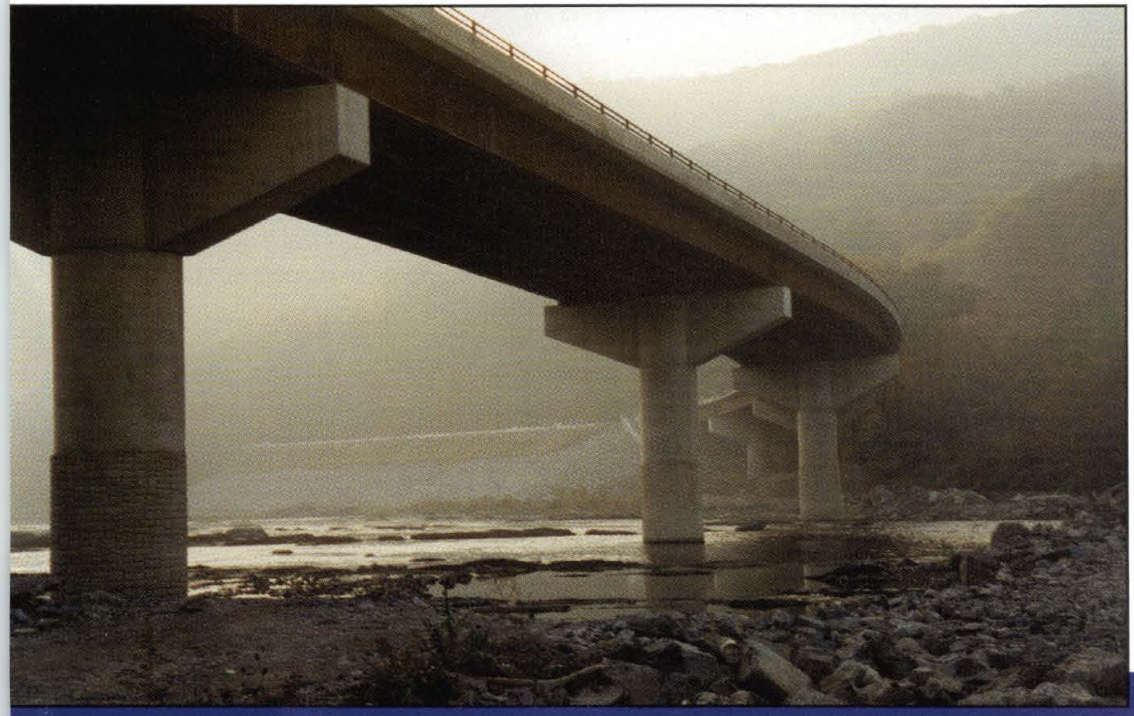
FHWA has made a concerted effort to avoid the destruction of environmentally-sensitive lands, particularly wetlands. And when there is no viable alternative, FHWA ensures that highway designs minimize the impacts on wetlands. In fact, FHWA replaces or preserves 2.3 acres of wetlands for every acre taken. From 1996-2000, this effort has produced a net gain of 11,628 acres of wetlands.

The construction of the Woodrow Wilson Bridge replacement, located near Washington, D.C., started in October, 2000, after an exhaustive series of environmental tests and legal hurdles were successfully concluded. The $2 billion structure between Maryland and Virginia is a crucial link in the Eastern United States interstate highway system. Typical of the careful steps taken to minimize environmental impact, is the conduct of the initial dredging operation. The operation is removing nutrient-rich river-bottom silt to provide a deeper body of water for construction vessels. The silt is being moved to a former plantation site on the James River in Virginia that had previously been strip-mined for its sand and gravel content. The site will then be available for farming. This is a process that dates back to colonial times; George Washington harvested river-bottom soil to revitalize his farmland at Mt. Vernon.



Dredging at the site of the new Woodrow Wilson Bridge started in October, 2000.

Sensitivity to the environment continues into the provision of materials and construction techniques that are frequently selected for their ability to blend in with the surroundings. A good example of this exists in the U.S. Route 340 bridge, part of the National Highway System, which crosses the scenic Shenandoah River in Harpers Ferry, WV. For the new bridge, constructed to replace a structure built in 1949, steel girders that oxidize to a warm brown were selected to blend in with the rugged mountainous terrain. In addition, the bridge piers were cast to resemble stone construction.



The new U.S. Route 340 bridge crosses the Shenandoah River near Harpers Ferry, West Virginia.

FEDERAL HIGHWAY ADMINSTRATION

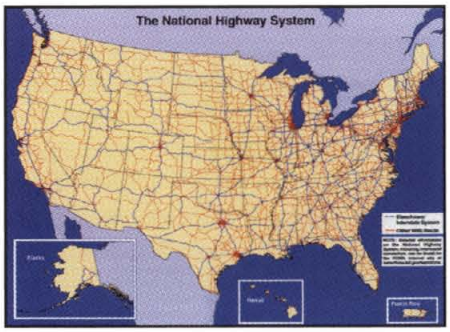
WHO WE ARE

The Federal Highway Administration (FHWA) is a major agency of the U. S. Department of Transportation. FHWA administers more than half of the budget authority of the Department with only 3 percent of the Department's total employees. FHWA is charged with the broad responsibility of ensuring that America's roads and highways continue to be the safest and most technologically up-to-date. Although the states and local governments own most of the nation's highways, we provide financial and technical resources for them to improve and maintain America's highway system.

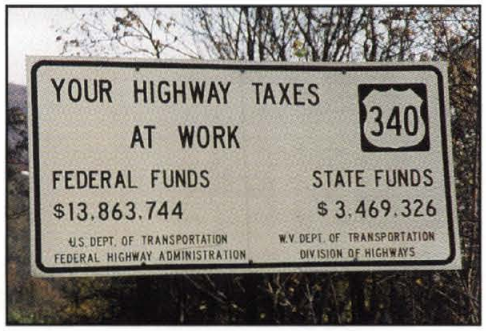
The U.S. Department of Transportation Building in Washington, D.C.

As with all cabinet-level organizations of the Executive Branch of the government, the Department of Transportation is led by the Secretary of Transportation. Our top official is the Administrator, who reports to the Secretary. We are headquartered in Washington, D.C. and have offices in every state. Our greater than $30 billion budget is funded by the fuel and motor vehicle excise taxes levied on highway users and is primarily divided between two programs: the **Federal- aid** Program and the **Federal Lands Highway** Program

Very simply, the Federal-aid Program assists the states in the construction, preservation and operation of the National Highway System, a 160,000-mile network that carries 40 percent of the nation's highway traffic. It also includes almost 1 million additional miles of urban and rural roads not on the System that are eligible for Federal aid. The Federal Lands Highway Program is concerned with the roads and highways that are located within federally-owned lands and Indian land. While the states generally manage their own construction programs, Federal Lands programs assist the agencies that are responsible for maintaining and operating the roads on their properties (like the National Park Service) by providing plans, letting contracts and supervising construction.



The United States National Highway System



You've no doubt driven by a highway construction site and perhaps seen a sign that shows the overall dollar cost of that project, expressed as two separate dollar amounts; the federal amount provided by FHWA and the amount contributed by the state or local government. Other evidence of our presence is the offices we maintain in every state (they're our Divisions) and the four regional resource centers. These centers provide technical and other types of assistance to the Divisions and the states and other federal agencies, as well as organizations such as Metropolitan Planning Organizations (MPOs), cities, environmental organizations, and other interested parties.

Federal Lands Highway Programs are administered through the three regional Federal Lands Highway offices. We also operate a world-class highway research, development and technology facility in McLean, VA where we conduct research on a wide variety of techniques and materials. We often partner with colleges and universities in this research.

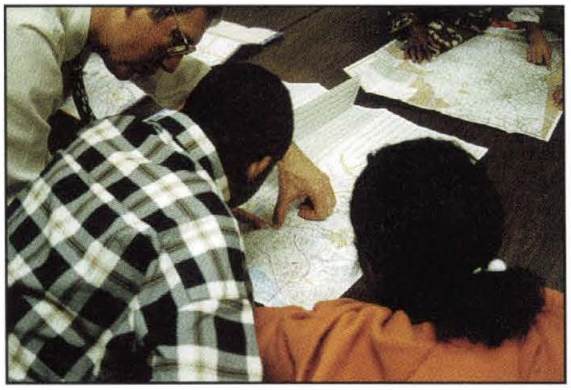
One of the techniques FHWA refined was a process popularly called "Bridge Straightening," which allows the use of high temperatures to straighten out deformed steel bridge members. Using the process allows highway departments to repair a bridge without taking it out of service or ordering replacement members. FHWA offers training in this technique, which formerly had been known only to a few craftsman.

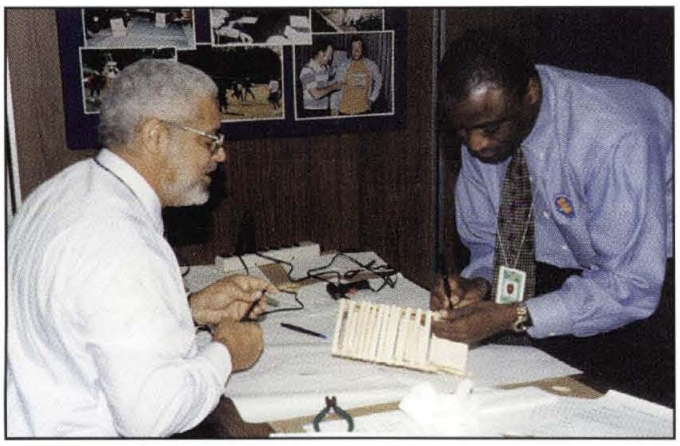
FHWA engineers come in a number of different varieties. These are bridge engineers, discussing the merits of bridge design during National Engineer's Week, held in February.

So much for the "bricks and mortar" of the organization. Former FHWA Administrator Rodney Slater often said, "FHWA is more than concrete, asphalt and steel. It's the FHWA family of people that make up the organization." And it's a very diversified family.

To start, since we have a great deal to do with highway design and construction, a good proportion of our people are **engineers** of all kinds; civil engineers, computer applications engineers, environmental engineers, electrical engineers, metallurgical engineers and mechanical engineers, to name a few.

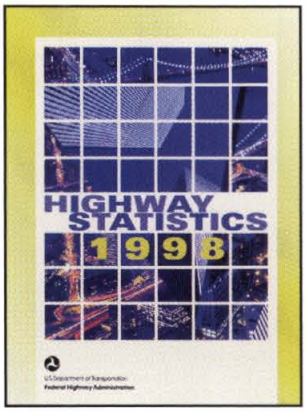
Just like most major private corporations, FHWA activities and programs are supported by other groups of people. We have a group of **lawyers**, who make up our chief counsel's office; an organization staffed by **civil rights experts**; a corporate management office staffed by **quality experts**, which, essentially, reviews the effectiveness of FHWA processes and programs; a group of **policy experts,** whose job it is to oversee FHWA policy as well as **public affairs experts** who provide information about the agency's operation and programs to the media and general public. Our **administrative experts** handle such diverse duties as managing our information systems, overseeing publishing and communications, handling contract matters, including acquisitions, and managing our human resources function.





Engineers frequently visit job sites to monitor construction progress. Here a group is inspecting some of the girders that will make up part of a bridge on the I-15 project in Salt Lake City, UT.

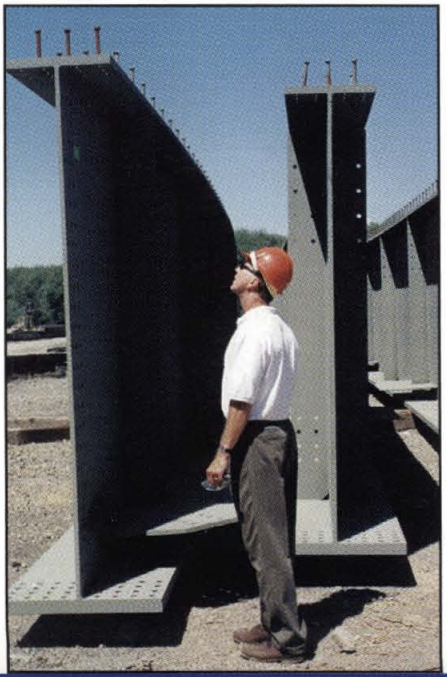
And since we're responsible for compiling, publishing and interpreting a whole range of statistics and financial information on our roadways, we also have a number of **statisticians** and **economists** on our payroll. While the states gather most of the information, it's up to the FHWA to compile and make available the data in a number of different formats. This is done annually in the publication *Highway Statistics.* We provide support to states, MPOs, cities and other organizations, helping them plan for and determine the best uses for transportation monies. The U. S. Congress frequently requests help in interpreting the data.



The Highway Statistics Manual is also available in electronic form.

And speaking of planning, FHWA has a group dedicated to planning and environment. They're involved with everything from preparing border crossings to handling increased traffic resulting from treaties like NAFTA to helping large metropolitan areas formulate transportation plans to also accommodate increased growth. Our **environmentalists'** jobs range from reviewing the Environmental Impact Statements that now form a part of every significant highway project evaluation, to people who are experts on just what wildflowers should be planted in highway median strips to reduce mowing costs and increase highway beautification.

It is in the best interest of all concerned to complete highway construction as rapidly as possible. In the last few years, FHWA, working with its many partners in the states and construction industry, has devised several different innovative financing plans for financing the project and for rewarding contractors for finishing construction in a shorter time frame. Much of this has been worked out by our **finance experts**, who work with their state counterparts in expanding the limited federal and state funding to include bonds, private investment and money from other sources. This way, states get their roads built when they're needed, without having to wait the more traditional way of accumulating funds until the amount required is available.



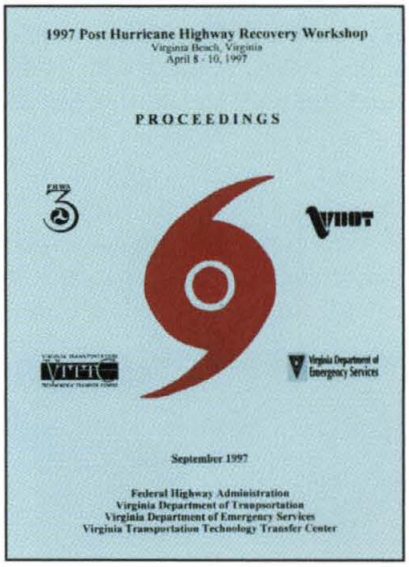
The I-15 reconstruction project in Salt Lake City included incentive clauses to the contractor to speed construction so the project would be completed in time for the Olympics. Here a worker inspects a girder to be used in bridge construction on the project.

Highway construction often infringes on sensitive wetland areas, disturbing delicate ecological balances. FHWA and the States are required to subject each major construction project to an environmental review, called an Environmental Impact Statement, to eliminate such infringement and possible destruction. Our goal is to replace each acre of wetlands impacted by construction with 2.3 acres of new wetlands. Here a group of Connecticut Division employees are on a tour of a nearby wetlands.

Classes are often taught at our new National Highway Institutes facility in Arlington, VA.

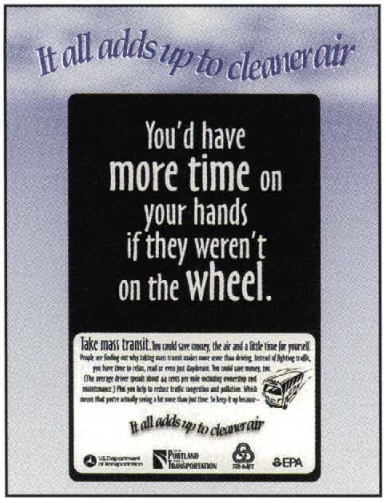
Education and training are a big part of FHWA's activities. Our National Highway Institute **instructors** train thousands of folks every year, not only from the states but also from many other countries as well. Courses cover technical subjects and procedures. They can range from teaching the latest techniques in managing snow and ice, to seismic bridge design, which gives engineers information on how to help bridges better withstand earthquakes.

We often take training to the field. After the 1999 hurricane season, FHWA joined a number of state highway departments to explore more effective ways to conduct orderly evacuations, as well as ways to make highway infrastructure less vulnerable to destruction. And highway and law enforcement officials in the earthquake zone near St. Louis, MO, recently received training from our Missouri Division employees on the most effective methods of managing post-earthquake damage to the highway infrastructure.



The 1997 Post Hurricane Highway Recovery Workshop Manual contained over 250 pages of information shared with the many state and federal officials who attended the September 1997 meeting in Virginia Beach, VA.

But no matter what our duties or responsibilities within FHWA, we all share one common feeling—our pride in making America's highway system among the best in the world.



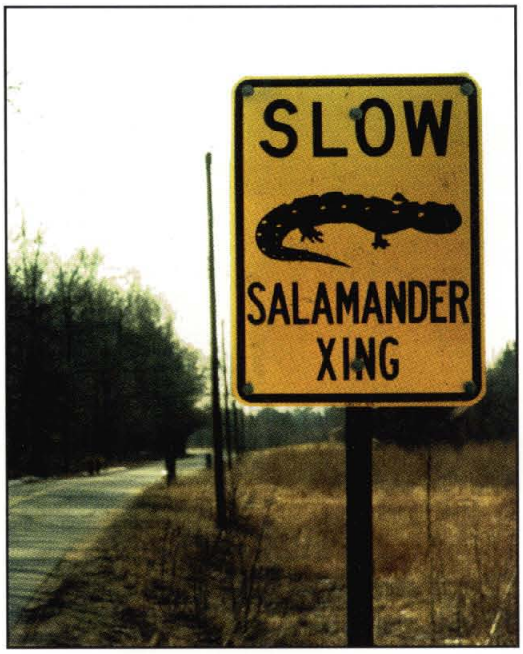
FHWA is showing the same careful consideration for air quality. In 1998, FHWA launched a public service awareness program called "It All Adds Up to Cleaner Air," conducted with the EPA and the Federal Transit Administration. The initiative included two years of extensive research, pilot tests and demonstrations in 17 cities. Through this program, FHWA identifies specific actions citizens can take to improve air quality through their transportation choices.

One of the public service advertisements distributed to local newspapers in the 17 project cities.

FHWA designs transportation for wildlife as well as people and freight. Overpasses, underpasses, culverts and other appropriate structures are built to accommodate the trails animals use to cross highways. Called "critter crossings," these humane solutions to separating highway traffic from animal traffic also reduce the number of human fatalities from collisions with deer, moose, bears and other large animals.

Left, a "critter" finds that there's a safer way to cross the road.

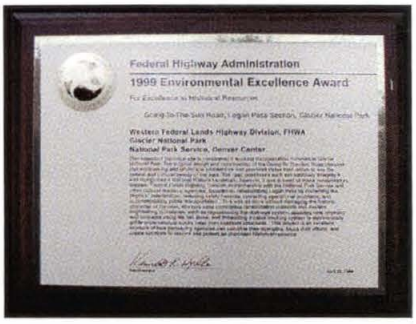
Right, some "critter" crossings come with appropriate signage.



Before a shovelful of dirt is turned on a road project, FHWA often participates in planning sessions with the local communities. In the South Park Avenue Improvement Project in Tucson, AZ, for example, the city held visioning sessions with the local community to be sure that the proposed work met with their total transportation needs, such as pedestrian, bicycle, accessible transit stop facilities, ADA-approved curb cuts and crosswalks. The project developed an overall plan for the neighborhood and adjoining neighborhoods to serve as a strategic plan for reaching the overall goals of transportation, education, employment, health, economic development and land use. It is an excellent example of how FHWA makes a difference in the area of environmental justice.

Planning sessions with community representatives and local and state governments can insure that a transportation project is designed to accommodate the needs of the people who will be using it. Here, a group of federal, state and community leaders meet to discuss the transportation requirements of residents who will be leaving welfare to take new jobs outside the community.

The "Going to the Sun Road" in Glacier National Park, MT.



The FHWA Environmental Excellence Award

Lastly, in order to recognize outstanding examples of environmental excellence, FHWA established the Environmental Excellence Awards Program in 1995. Any project, process, person or group of people that has used FHWA funding sources is eligible to enter and compete for the Award. One of 1999's outstanding winners was the reconstruction project of the "Going To The Sun Road" in Glacier National Park, MT. A joint project of the Western Federal Lands Highway Division and the National Park Service, the project won in the category of Excellence in Historical Resources. Workers on this project repositioned the drainage system, applied new retaining wall concepts using the original stone, and brought the road up to 21st century standards by imbedding a cable tracking system to electronically guide snow-removal trucks away from roadside structures.

No longer are environmental concerns the exclusive property of those who monitor the condition of the earth's air or water. Environmental concerns are everybody's concerns and at FHWA they assume a particular importance—one that touches virtually every aspect of highway construction.