

National Highway System: Imagining the Future

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National Highway System: Imagining The Future

By Richard F. Weingroff
Federal Highway Administration

The Intermodal Surface Transportation Efficiency Act of 1991 authorized establishment of a National Highway System that would be the primary Federal focus of the post-Interstate era:

The purpose of the National Highway System is to provide an interconnected system of principal arterial routes which will serve major population centers, international border crossings, ports, airports, public transportation facilities, and other intermodal transportation facilities and other major travel destinations; meet national defense requirements; and serve interstate and interregional travel.

But where did the concept of a National Highway come from?

At the start of the Interstate Highway Program, the Federal-Aid Highway Act of 1956 authorized \$25 billion in Interstate Construction (IC) funds through fiscal year (FY) 1969. The assumption was that the last dollar would be spent on what was then a 41,000-mile Interstate System in the early 1970's. As a result, officials of the U.S. Bureau of Public Roads (BPR) and the State highway agencies began thinking about the post-Interstate era long before it arrived.

On October 21, 1963, for example, Federal Highway Administrator Rex Whitton delivered an address on "Highway Planning: What Comes After 1972?" to the annual meeting of the American Association of State Highway Officials (AASHO):

We have been concentrating, in recent years, on our current programs, including the tremendous job of completing the presently planned Interstate System by 1972. But at the same time, I'm sure that every one of us has begun to ask himself, "After 1972, what then?"

He noted that AASHO, among others, had suggested to Congress the need for a study of the future and that BPR had established a National Highway Planning Division in the Office of Planning to consider such issues. The end of the Interstate Highway Program could, he said, "cause drastic dislocations in our economy." Although he expected calls for extension of the Interstate System, Whitton and others were thinking instead about an intermediate system:

Perhaps we need to assign part of the primary system to a new Federal-aid system, lying next to the Interstate in importance... The concept of an intermediate Federal-aid system quickly raises the companion idea of an intermediate Federal cost sharing ratio, of perhaps two thirds or three-fourths.

The idea of an intermediate system was a common theme of BPR officials during the 1960's.

In March 1966, for example, E. H. "Ted" Holmes, the BPR's Director of Planning, noted that many Federal-aid primary (FAP) routes, once the Nation's principal highways, were inadequate for today's traffic, yet alone the demands of tomorrow:

Should there perhaps be a "second tier" system, between the full freeway of the Interstate and the usual primary or arterial standards and if so, what should be its extent, and how should its routes be selected? What should be the Federal participation ratio - 90-10, 50-50, or somewhere between like 2-1, as in

many other Federal-aid programs for example? To us the only way to approach such answers is by a study of the function of all routes, getting away from the systems of administrative designation that [have] too often grown on itself over the years.

Congress recognized the need for planning in Section 3 of Senate Joint Resolution 81 (Public Law 89-139, August 28, 1965), which called for biennial reporting on the Nation's highway needs.

In response, the Nation's first Secretary of Transportation, Alan S. Boyd, transmitted the initial National Highway Needs Report to Congress on January 31, 1968. As for the post-Interstate program, the study questioned the desirability of expanding the Interstate System, which "is accomplishing a job that needed to be done at a particular stage in the development of the Nation's highways." Instead, the study suggested the Federal Government help the States build an intermediate, supplementary system of about 66,000 miles. It "seems unlikely" a divided freeway design could be justified for all routes on an intermediate system; two-lane roadways could be expected to serve travel needs adequately for the normal design period.

Despite this recommendation, the Federal-Aid Highway Act of 1968 authorized a 1,500-mile extension of the Interstate System. Secretary Boyd announced designation of the mileage on December 13, 1968, thus extending the program - and the time when a decision on the post-Interstate program would have to be made.

Junior Interstates

The 1970's were turbulent years of oil shortages that led to attempts to conserve energy by getting commuters out of their cars. The difficulties brought a new focus on transit investment and encouragement of bicycling and walking. The States began the process of establishing departments of transportation, encompassing all modes, to take a broader approach to developing statewide transportation networks while diminishing the dominant role of highways in planning and use. Reflecting this transformation, AASHO became the American Association of State Highway and Transportation Officials (AASHTO) in 1974.

In addition, the 1970's were filled with continued controversy over planned segments of the Interstate System, especially in urban areas. Project opponents were turning increasingly to litigation to block Interstate projects, citing violations of Section 4(f) of the Department of Transportation Act protections for park and recreation lands, wildlife and waterfowl refuges, and historic sites; the National Environmental Policy Act of 1969; the National Historic Preservation Act of 1966; the Endangered Species Preservation Act of 1966; and a growing list of other statutory protections for the environment and communities.

Often, despite bitter citizen opposition, Mayors were hesitant to abandon the controversial routes - and the Federal dollars that came with them. The Federal-Aid Highway Act of 1973, and its subsequent amendments, provided a solution. It allowed State and local officials to ask, jointly, the Secretary of Transportation to remove the route from the Interstate System if it was not necessary for a connected network and a toll road would not be built in its place. In return, funding equal to the estimated cost of the Interstate route would be available for alternative highway and transit projects. This solution allowed the Mayors to bring controversies to an end without losing the money.

Even as State and Federal highway officials worked through these controversial issues and adapted to the new social consciousness, the post-Interstate era was not far from their thoughts.

By the 1970's, the intermediate network had been nicknamed "Junior Interstates." Federal Highway Administrator Francis C. "Frank" Turner suggested that all FAP routes carrying 5,000 or more vehicles per day should be upgraded or replaced with something more than a two-lane road:

Now of course most of these "junior Interstates" that I am proposing will not be built to Interstate System standards. Most of them will not be controlled-access roads, although some of them may well be. However, they **will be** divided highways, and as such they will be immensely safer than the existing two-lane roads they will replace...

Turner explained that in developing a rationale for highway program alternatives, "we must think in terms of not only total transportation goals and how highways relate to them, but also in terms of overall national development goals and how they interrelate with transportation.

Later biennial highway needs reports continued to explore alternatives, but without focusing on an "intermediate" primary network. Instead, they recommended a functional reclassification of the Nation's roads and economic analyses to set the stage for decisions on the post-Interstate program.

Refining the Concept

By the end of the decade, the States had opened 39,777 miles of what was then a 42,500-mile Interstate System. The post-Interstate era again appeared just around the corner.

In June 1984, therefore, AASHTO established a Task Force on Future Directions for the Federal-Aid Highway Program. The Task Force, which was headed by Director Fred D. Miller of the Oregon Department of Transportation, included State transportation leaders from around the country. Among them were future Federal Highway Administrators Robert E. Farris (Tennessee) and Thomas D. Larson (Pennsylvania) as well as future Deputy Federal Highway Administrator Lowell B. Jackson (Wisconsin).

The Executive Summary of the task force's final report explained the goal:

Now, as completion of the Interstate System draws near, an opportunity exists to make a systematic transition and redefine the federal role in national highway programs.

The task force adopted 45 recommendations on April 30, 1985, one of which was for a "System of Highways of National Significance" (SHNS) to consist of the Interstate System, the FAP, and bridges on all current Federal-aid systems. "This approach would concentrate federal resources toward those project requirements which are of truly national importance." In part, the SHNS concept reflected the experience in several States, particularly in the Southeast, that had begun to focus funds on a limited network of principal arterials to stimulate investment and economic opportunity. This focus was known as strategic investment, a phrase Dr. Larson defined as applying large blocks of money in a short time frame "where the promise of payoff is real and the benefits large."

The task force also attempted to rethink the Federal, State, and local roles. Recommendations included such proposals as completing the Interstate System by 1990 with no further expansion and creation of a block grant program for highways of State and local interest.

Enactment of the Surface Transportation Uniform Relocation Assistance Act of 1987 (STURRA) would prompt AASHTO and the broader transportation community to revisit these concepts. This legislation, approved on April 2 when the Senate overrode President Ronald Reagan's veto of the bill, authorized what all observers expected would be the last IC funds. In fact, the Conference Report on STURAA made it clear that in the view of the Members of Congress, the authorized IC funds "will provide the states sufficient funds to complete the System."

Because STURAA authorized the Federal-aid highway and transit programs through FY 1991, the transportation community saw 1991, when Congress would consider reauthorization of the programs, as the year the post-Interstate era would be shaped in legislation. From 1987 to 1991, the idea of an SHNS emerged from separate and overlapping initiatives as the consensus view of what should be the primary focus of the Federal-aid highway program. Aside from AASHTO, initiatives by the Federal Highway Administration (FHWA), the Highway Users Federation for Safety and Mobility (HUFSA), American Road and Transportation Builders Association (ARTBA), and others identified the SHNS as the program of top Federal interest now that the Interstate System was essentially complete.

The SHNS also emerged with a new name: the National Highway System (NHS).

Picturing the NHS

As the NHS began to emerge as the centerpiece of the post-Interstate Federal-aid highway program, officials began trying to identify what it would look like. They wanted to give Congress an idea of which routes would be included in the NHS when debate on the concept began in 1991.

The first attempt to develop an NHS map began in March 1989, when AASHTO, through its Task Force on a Highway System of National Significance, and FHWA officials met in Annapolis, Maryland. The 12-State Task Force was chaired by Clyde Pyers of the Maryland Department of Transportation. FHWA Planning Director Kevin E. Heanue headed the agency's team.

The first step was to take a fresh look at the functional classification of the Nation's highways and redefine principal arterials, from which the NHS would be selected. In a series of regional meetings around the country, Pyers, the FHWA's Bill Bullard, and other officials explained that the first phase, targeted for completion by July 1, 1989, was to review the principal arterial system in each State. The review would be conducted in coordination with local governments and metropolitan planning organizations.

While Dr. Larson, who took office in 1989 as the Federal Highway Administrator under President George H. W. Bush, took the lead in developing a National Transportation Policy, AASHTO and FHWA cooperated to identify components of the NHS. The process involved State submissions to AASHTO and cooperative reviews with the FHWA. However, many differences existed among the States. Some States feared burdensome, expensive Federal standards, and were not committed to the NHS concept. They volunteered as little mileage for the NHS as possible. Other States tried to get as much mileage into the NHS as they could on the theory that Congress would link NHS funding to mileage. AASHTO, a voluntary association of the State transportation departments, could not force a resolution on its members.

With the AASHTO/FHWA efforts underway, the Committee on Public Works and Transportation of the U.S. House of Representatives stepped in to claim oversight and give the initiative a more official motivation. On May 23, 1990, the leadership of the Committee (Chairman Glenn M. Anderson (D-Ca.) and Ranking Member John Paul Hammerschmidt (R-Ar.) and its Subcommittee on Surface Transportation (Chairman Norman Y. Mineta (D-Ca.) and Ranking Member Bud Shuster (R-Pa.)) wrote to Administrator Larson. Noting that the cooperative AASHTO/FHWA efforts had not resulted in a recommendation on the extent of an NHS, the Committee suggested that continuing the effort would be helpful to its deliberations in 1991:

Accordingly, we request that the FHWA, in cooperation with AASHTO, the States, local governments, and as appropriate, the MPO's and rural agencies, continue the efforts begun by the AASHTO Policy Committee to designate a preliminary National Highway System as part of your proposal based on the 1989 functional reclassification planning effort and the criteria in [AASHTO's] "New Concepts" report. Although a formal functional reclassification may result in revisions to work completed during 1989, a map showing progress toward identifying a preliminary NHS would be helpful to the Committee as future program options are deliberated.

Shortly after receiving the request, the FHWA met with AASHTO, the National Association of Regional Councils, and individual States and metropolitan planning organizations (MPO) to formulate an approach for complying with the Committee's request. Based on these discussions, the FHWA developed guidelines for selecting an NHS in three options based on mileage levels:

- Option 1: 120,000 miles
- Option 2: 150,000 miles
- Option 3: greater than 150,000 miles (180,000?)

Option 3, which would be at the discretion of the individual States, was included to give States that wanted a larger system to show what it would look like. In addition, the FHWA assigned tentative mileage allocations to the States corresponding to each level and asked them to submit maps depicting their candidate systems.

Over the next few months, as States worked on and submitted tentative NHS recommendations, many issues were raised about the designation process. Following a meeting on October 10, 1990, with participants in the process, Pyers summarized the concerns of State transportation officials with the FHWA's process:

Generally, the States/MPO's questioned how FHWA would respond to Congressional questions regarding the national objectives to be served, the criteria for putting routes on the system, and how this system would address such issues as congestion and air quality. States and MPO's were also concerned that FHWA was being too rigid in its push for a 70/30 split between the NHS and the urban/rural program and the inability to transfer funds under the FHWA proposal. They felt that this biased the process even though FHWA has consistently stipulated that "underlying the entire exercise is the presumption the apportionment and system extent will be decoupled." Some States/MPO's felt that Options 1 and 2 should be discarded because they produced too lean a system, while others endorsed a lean, focused network.

When AASHTO met for its annual meeting in December 1990, Dr. Larson addressed the Policy Committee on the NHS about the difficulties encountered while preparing an illustrative system:

The most probable focal point for the [post-Interstate] program, the unifying theme, will be the "National Highway System"--a concept now much discussed. Few can doubt that defining highways of national significance will be a formidable task. But difficulties notwithstanding, it's a necessary one... We are doing this now and we will continue the task with all of you as partners--until we get it right!

He assured them on each point Pyers had cited in October:

Let me assure you that this process will continue to be deliberate and open. As many States have requested, we will look at multiple criteria, diverse objectives with regard to mileage levels in each State. We will move to de-couple apportionments from the designated mileage. We will call for transferability between the funds for Highways of National Significance and our flexible urban-rural program. We want to hear from all parties - we need your advice so we can best assist Congress. But we do intend to provide leadership here. We do intend to move forward.

After noting that 1991 would be a pivotal year for the NHS concept, Larson commented on its importance. "It is that one concept, I believe, most likely to build the broad support, provide the vision, and offer the unifying theme to empower this partnership of ours towards the coming century."

On February 19, 1991, the FHWA submitted the illustrative NHS map to the Committee on Public Works. Developing the illustrative map helped the FHWA learn "many of the problems involved in designating an NHS in a country as diverse as ours," Larson said in the transmittal letter. However, the process demonstrated "the workability of the concept and the general appropriateness of the 150,000-mile scale."

Congress Takes on the NHS

In a White House ceremony on February 13, 1991, President George H. W. Bush unveiled the Administration's proposal for the post-Interstate legislation called the Surface Transportation Assistance Act of 1991 (STAA).

The NHS, which was the centerpiece of the STAA, was represented by a large map of the illustrative NHS alongside the President's podium. Federal investment would be focused on maintaining and improving the NHS, which would serve interstate and interregional transportation. The Interstate System would be included in the NHS along with other roads of importance to national defense that had long been part of the Strategic Highway Network (STRAHNET). In addition, State and local officials would consult with the FHWA on which arterial roads would be included in the NHS, subject to approval by the Secretary of Transportation. Projects on the Interstate System would retain a Federal share of 90 percent, but for other NHS projects, the Federal share would be 75 percent.

The proposed STAA was forwarded to Congress, where the House typically presents its version of surface transportation reauthorization first. The House Committee on Public Works and Transportation held hearings on the STAA, but Committee leaders, along with Speaker of the House Thomas S. Foley (D-Wa.), wanted to build support for a gas tax increase, despite presidential opposition, to finance an expanded Federal-aid highway program. Ultimately, this effort would fail, but it would delay release of a House bill until late summer.

In the vacuum created by the absence of a House bill, Senator Daniel Patrick Moynihan (D-NY) took the lead. Virtually from the start of the Interstate Highway Program in 1956, he had been skeptical, especially of the impacts its urban segments would have on the vitality of the Nation's cities. He was convinced the time had come, finally, to turn away from the automobile and find alternatives to the highway that were more sensitive to community and environmental needs. He favored transit, IVHS (intelligent vehicle/highway systems, now the broader concept of Intelligent Transportation Systems), congestion pricing (now called value pricing), and maglev (magnetic levitation trains). He also was looking for funds that State and local officials could use to implement the Clean Air Act Amendments of 1990 (CAAA), which imposed mandates for meeting National Ambient Air Quality Standards without providing the funds to achieve them.

Although Moynihan had written about these concerns in 1960 ("New Roads and Urban Chaos" in *The Reporter*, April 14, 1960), his successful academic and government career had given him little opportunity to do anything about it. Since winning election to the Senate in 1976, however, he had gradually built up tenure to the point where he was finally in the right position at the right time.

Chairman Quentin Burdick (D-ND) of the Committee on Environment and Public Works was in failing health. He decided to let Senator Moynihan, Chairman of the Water Resources, Transportation and Infrastructure Subcommittee, take the lead on reauthorization, with only one condition: that he take care of North Dakota. Moynihan agreed. He was ready for this opportunity to put his longstanding concerns about the highway program, as well as his desire for funds to implement the CAAA, into a legislative framework.

On April 25, he took to the Senate floor to introduce S. 965, the Surface Transportation Efficiency Act of 1991 (STEA). According to a news analysis in the trucking industry's newspaper, *Transport Topics*, Senator Moynihan's proposal "hit the highway community like a ton of bricks." In many respects, STEA paralleled proposals by the Surface Transportation Policy Project (STPP), which represented pro-transit and environmental organizations that had formed the umbrella group a few months earlier to pool their efforts for maximum impact in this critical year.

Moynihan's bill included all of his favored initiatives. Reluctantly, he continued \$7.2 billion in Interstate funding through 1996, primarily to complete the Central Artery/Tunnel Project in Boston, Massachusetts. The closest STEA came to the NHS was a provision that authorized a functional reclassification of all public roads. As envisioned by the FHWA and AASHTO, reclassification was the first step in designating the NHS. However, STEA made no commitment to link the reclassification to designation and funding of an NHS - the bill was simply silent on the subject of the NHS.

When Dr. Larson testified on May 17 before Senate Subcommittee, he made the NHS the centerpiece of his statement:

While we **are** moving to the post-Interstate construction era, we are not yet ready for a post-highway transportation economy.

He praised some of the innovative elements of STEA but informed the subcommittee that the White House "cannot support legislation that does not include a designation of such a national highway network."

Moynihan, who had developed a professor-to-professor relationship with Larson over the past year, was only moderately conciliatory. Perhaps, he suggested, the Committee would be willing to consider the concept if an actual proposal, not just an illustrative map, were developed over 2 years. As the Senator told *The New York Times*, he wanted to see "exactly what it is, precisely, mile by mile."

Under pressure from Secretary of Transportation Samuel K. Skinner, Dr. Larson, and others, the Committee added an NHS provision before clearing the bill for Senate consideration. The bill called for the U.S. Department of Transportation (DOT) to submit a proposal to Congress within 2 years for an NHS that would show which routes would be included.

When the bill arrived on the Senate floor on June 4, Moynihan summarized its provision on the NHS:

The Committee was of course aware of the Secretary's concerns, and sympathetic to them. However, the National Highway System called for by the administration bill (S. 610) is not yet drawn. No Senator can know that any portion of it will be located in his or her State. No Representative can know whether any segment passes through his or her District. We may assume, for example, that Texas will be included. But we don't know. The Committee bill accordingly directs the Secretary of Transportation to draw a precise map and submit the proposal to the Congress in two years' time.

It was a long introductory statement, 13 pages in the *Congressional Record*, but that was all he had to say on the subject that the Administration considered the key feature of the post-Interstate era.

As the Senate began debate on the bill, Senators John Breaux (D-La.) and David Durenberger (D-Mn.) introduced an amendment that provided funding (17 percent of funding from the new Surface Transportation program category) for an "interim" NHS based on the illustrative map, with the DOT to designate an official NHS in 2 years consisting of the Interstate System plus 140,000 miles of other principal arterial highways. This provision made it into the approved Senate version of STEA.

The House of Representatives was more receptive than Senator Moynihan to the NHS, which was included in the Committee on Public Works and Transportation bill introduced on July 18, 1991. The Department was to submit a proposed NHS (up to 155,000 miles, plus/minus 15 percent) within 2 years for congressional approval. Until then, any route functionally classified as a principal arterial would be eligible for NHS funds (a total of \$38.8 billion). The House added "High Priority Corridors," specified in the bill at the request of Members of Congress, that would be included, in addition to the Interstate System and other principal arterials.

When Congress approved the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) in November, it included a combination of the House and Senate versions. The Department was to submit a proposal to Congress by December 18, 1993 (2 years from the date of enactment of ISTEA), for designation; the mileage limits were the same as in the House version. Components of the NHS were:

- The Interstate System,
- 21 High Priority Corridors identified in Section 1105,
- Other selected principal arterials,
- STRAHNET, and
- Connectors to military installations.

Prior to congressional approval, NHS funds could be used on any road classified as a principal arterial. However, beginning in FY 1996, no NHS or Interstate Maintenance Program funds could be apportioned to the States until Congress approved legislation designating the NHS.

On December 18, 1991, President Bush approved ISTEA in a signing ceremony on a State Highway 360 construction site in Tarrant County, Texas, not far from Dallas-Fort Worth International Airport. With congressional leaders on hand for the ceremony, the President called ISTEA "the most important transportation bill since President Eisenhower started the Interstate System 35 years ago." He added:

The future of American transportation begins today.

The evolution of the NHS concept through its adoption in ISTEA is told in detail in "Creating a Landmark" (*Public Roads*, November/December 2001, <https://www.fhwa.dot.gov/publications/publicroads/01novdec/istea.cfm>).

Senator Moynihan agreed about ISTEA, especially the "unprecedented flexibility" to shift funds among modes and the provisions that would "improve the efficiencies of the systems we now have," as he told a reporter for the *National Journal* that same month. As for the NHS, the Senator was still skeptical:

I'm sure they had very large hopes for a national highway system that would really be something new...

The President had this briefing and there was this big map - a wonderful big map with all these red lines that said "National Highway System" - then in small print it said "Suggested."

As far as he was concerned it was simply a new name for the FAP system and would, like the FAP funding category that ISTEA had eliminated, turn out to be a funding category rather than a national mission.
