

# THE EVOLUTION OF PROGRAMS

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## THE 1972 AND 1974 NATIONAL TRANSPORTATION STUDIES (NTS)

**One of the first attempts of a relatively young Office of the Secretary to coordinate and assert control of the planning efforts of DOT's modal administrations**

Arrigo Mongini

The Department was created as a kind of holding company for different modal administrations, each of which had its own legislative mandate, organizational structure, congressional oversight committees, and constituencies in the public and private sectors. The Office of the Secretary was the only entity with a mandate to improve the functioning of transportation in general, and it soon became clear that this was not an easy task because of the diversity of these modal interests and bureaucracies.

Of particular concern to OST was the fact that estimating of capital investment "needs" by each of the modal administrations in cooperation with the states, gave little consideration to other modes. These estimates were reported directly to Congress for consideration by different legislative committees, using engineering standards, with little economic justification and with little input from local elected officials.

Two of these modal planning efforts were the biennial National Highway Needs Studies and the National Airport System Plan, a kind of ongoing needs study. The capital grant program of UMTA was still in its infancy and was not part of a national planning program, MARAD did not join the Department until 1981, and the US Coast Guard, though part of DOT at the time, did not have a grant program.

It was decided that, the Highway Needs Study, in particular, should be put into context with other forms of transportation and carried out with input from not only state highway departments but also local elected officials. Much less effort was devoted to coordination with the National Airport System Plan and other FAA planning activities.

A small group within OST's Office of Systems Analysis, under the Assistant Secretary for Policy, was given the job of implementing the 1972 study and later the 1974 study, working with state and local planners to consider alternative levels of transportation capital investment and mixes of highway and transit investment. A manual was created for states and localities to use in reporting these alternative levels of investment by mode consistent with different levels of total federal funding. Funds were made available to the states to support this planning effort. Emphasis was on statewide planning, local input, and tradeoffs between highway and transit in the larger metro areas, and on economic considerations under different funding constraints. and ability to shift

funding between highways and transit. As might have been expected, this massive outreach effort with state and local governments was difficult to integrate with the Highway Needs Study process, which had a long history of cooperation between FHWA and state highway departments. Many of the states viewed the biennial highway needs reports to Congress as essential to maintaining and increasing their federal funding allocations for highways. One somewhat humorous example of this problem was that when FHWA was asked to delay the issuance of their manual of guidance to states for the highway needs study in order to better integrate with the NTS, the FHWA response was to print the manuals as originally intended and distribute them to the states along with gummed labels to affix to the manuals indicating they were part of the NTS.

The results of the two national transportation studies were incorporated in two reports to Congress. These reports included summaries and analyses of state and local government plans and programs under different assumptions about funding levels and intermodal funding flexibility derived from the above outreach surveys as well as the results of other analyses and models from the Office of Systems Analysis and other parts of the Department. The outreach survey showed that increased federal funding flexibility would result in very little change in modal investment allocation nationwide but that in specific cases, primarily some of the larger metropolitan areas, there would be significant shifts to transit investment. The 1972 and 1974 reports also provided a place to give encouragement to other progressive ideas, short of

specific legislative proposals that would otherwise require extensive review by OMB and the White House. Besides funding flexibility, these ideas included such things as statewide transportation planning, metropolitan planning organizations (MPOs), and increased funding for these activities, non-capital improvements to increase efficiency of existing infrastructure, priority for high occupancy vehicles, peak load/road pricing, regulatory reform, state DOTs where appropriate, and increased involvement of state and local elected officials and the general public in the transportation planning process. These ideas did not spring from the NTS, but the NTS played a part in promoting them.

The National Transportation Study effort was not repeated beyond the 1974 report to Congress and it was perhaps naïve to think that the two reports themselves had a major impact on DOT programs. However, I believe that the process of having part of OST work with FHWA and other modal administrations at the staff level and with state and local planners in a cooperative fashion was instructive to all those involved. Unlike the budget process and other administrative activities of OST which involved review of the plans of others, the NTS outreach survey was an opportunity to work with others. In retrospect, an NTS-like planning process was relatively incompatible with a DOT organized along modal lines. DOT has more or less the same structure today as in the 1970s give or take a modal administration or two, so it would be just as incompatible today. Would it work any better if DOT were organized along functional lines?

# EXPANDING THE URBAN TRANSPORTATION PLANNING PROCESS:

## Fifty Years On

Edward Weiner

By the time that the US DOT was established, the Federal –Aid Highway Act of 1944 had passed creating the National System of Interstate Highways, as well as the Federal-Aid Highway Act of 1956 establishing the Highway Trust Fund which provided 90 percent Federal funding for construction of the system. The two acts launched the greatest public works program in the nation’s history which would have profound economic, social and environmental impacts on the county. The acts were administered by the U.S. Bureau of Public Roads which was incorporated into the US DOT and eventually became the Federal Highway Administration.

State highways departments started building the rural segments of the system first through methods and techniques with which they were familiar. However as planning and construction moved into urban areas, it was met with resistance. From 1956 forward “freeway revolts” arose in city after city as citizens and local officials realized the impact in terms of houses taken and neighborhoods disrupted that would be required. To address these concerns, a group of engineers, planners and policymakers recognized that techniques for building highways in rural areas were not wholly appropriate for locating, designing and building freeways in urban areas. They realized the complexity of urban areas and the need to take account of building freeways through an urban fabric. Their efforts led to the creation of an urban transportation planning process suitable for developing urban Interstate

highways with the passage of the Federal-Aid Highway Act of 1962.

The Bureau of Public Roads (BPR), moved quickly to implement the urban transportation planning requirements of the FederalAid Highway Act of 1962. Through its Urban Planning Division, the BPR carried out a broad program to interpret the provisions of the act, develop planning procedures and computer programs, write procedural manuals and guides, provide technical assistance, teach training courses, and develop professional staff. The effort was aimed at developing urbanized area planning organizations, standardizing, computerizing and applying procedures largely created in the late 1950s, and disseminating knowledge of such procedures.

The Act required urbanized areas over 50,000 in population to conduct a continuing, comprehensive transportation planning process carried out cooperatively between the states and local communities as a condition for receiving Federal aid for highway projects. Instructional Memorandum 50263, published in March 1963 and later superseded by Policy and Procedure Memorandum 509 interpreted the act’s provisions related to a “continuing, comprehensive, and cooperative” (3C) planning process.

- “Cooperative” was defined to include not only cooperation between the federal, state, and local levels of government but also among the various agencies within the same level of government;
- “Continuing” referred to the need to periodically reevaluate and update a transportation plan; and,
- “Comprehensive” was defined to include the basic ten elements of a 3C planning process for which inventories and analyses were required. (Table 1)

**Table 1**

**TEN BASIC ELEMENTS OF A CONTINUING, COMPREHENSIVE,  
COOPERATIVE (3C) PLANNING PROCESS**

1. Economic factors affecting development
2. Population
3. Land use
4. Transportation facilities including those for mass transportation
5. Travel patterns
6. Terminal and transfer facilities
7. Traffic control features
8. Zoning ordinances, subdivision regulations, building codes, etc.
9. Financial resources
10. Social and community value factors, such as preservation of open space, parks and recreational facilities; preservation of historical sites and buildings; environmental amenities; and aesthetics.

In response to the 1962 Act, states and local governments were required to sign a “Memorandum of Agreement” for carrying out the 3C planning process in their regions. A Unified Annual Work Program set out the various steps to be carrying out in each area and the organization responsible for performing each step. States and local governments had to make a major effort to organize and develop their own planning process. Few areas had an urban transportation planning process in place when the 1962 Act passed. It took time to negotiate Memorandums of Agreement, hire staff, develop work programs and begin the technical tasks to develop an urban transportation

plan. Nevertheless, by the legislated deadline of July 1, 1965, all the 224 existing urbanized areas which fell under the 1962 Act had an urban transportation planning process underway.

From these early beginnings, the urban transportation planning process expanded in a number of directions. First, the 3C planning process was essentially a highway planning process. Even though one of the basic 10 planning elements referred to transit, the procedures, analysis techniques, and software were oriented to highway planning. The Urban Mass Transportation Assistance Act of 1970 was a landmark in federal

financing for mass transportation. It provided the first longterm commitment of federal funds for transit. Until the passage of this act, federal funds for mass transportation had been limited. Some urban area planning processes gave fuller consideration to transit improvements over the years but it was not until the passage of the Urban Mass Transportation Act of 1974, that the 3C planning requirements were also applied to transit planning. By this time, the Urban Mass Transportation Administration had been transferred from the U.S. Department of Housing and Urban Development to the US DOT, later renamed the Federal Transit Administration.

In the 1970's, emphasis was placed on transportation system management techniques. They were strategies to increase capacity with low cost improvements. They included ride sharing, traffic operational improvements, increased transit services, better traveler information, and paratransit. There was increased interest in light rail transit as a lower cost alternative to heavy rail. As travel demand continued to increase, the strategy of demand management was promoted. Parking surcharges, tolling, peak hour charges, and trip reduction ordinances were implemented. The resulting changes made urban transportation planning a multimodal endeavor.

Second, the 3C planning process focused predominately on vehicle travel essentially to determine the forecast of traffic volumes to be used in the design of Interstate highways. No attention was given to non- motorized modes of travel. With the interest in sustainable communities has come a new focus on non-motorized modes of travel. The increased commitment to and investment in bicycle facilities and walking networks were designed to meet the goals for cleaner, healthier air; less congested roadways; and more healthy, livable, safe, cost-efficient communities. The Safe, Accountable, Flexible Efficient Transportation Equity Act: A Legacy for Users established the

Non-motorized Transportation Pilot Program to construct a network of non-motorized transportation infrastructure facilities, including sidewalks, bicycle lanes, and pedestrian and bicycle trails, that connect directly with transit stations, schools, residences, businesses, recreation areas, and other community activity centers.”

Consequently, the 3C planning process has evolved from a highway planning process to a full multimodal process considering the needs of vehicles and travelers bolstered by a legal and regulatory underpinning and the procedures and technical planning techniques to carry it out.

Third, the initial requirements for the 3C planning process set out by the Bureau of Public Roads were modest by today's standards. Many of the issues raised in the “freeway revolts” still needed to be addressed and the passage of time brought many new issues. Future legislation and regulations addressed the issues of the dislocation of homes and businesses, taking of property and park land and, transportation for the disadvantaged. The National Environmental Policy Act (NEPA) of 1969 required federal agencies to use a “systematic interdisciplinary” approach to projects that had an effect on the environment. The process culminated with the preparation of an Environmental Impact Statement (EIS). The Clean Air Act amendments of 1977 required the finding of conformity of transportation plans and programs with established clean air standards.

The energy embargo of the early 1970's brought the new concern of petroleum usage and added the reductions of energy consumption to the requirements on the planning process. More recently, the increase in global warming and the consequent rise of major storms has focused attention on infrastructure resiliency. Concern for environmental justice needed to be addressed in planning transportation service improvements. In addition, the desire for more livable and sustainable

communities has broadened the focus of the urban transportation planning process on such measures as traffic calming. And of course, the need for adequate financial resources has always been a concern.

As these new concerns and issues arose, changes in planning techniques and processes were introduced. These modifications sought to make the planning process more responsive and sensitive to those areas of concern. Urban areas that had the resources and technical ability were the first to develop and adopt new concepts and techniques. These new ideas were diffused by various means throughout the nation, usually with the assistance of the federal government and professional organizations. The rate at which the new concepts were accepted varied from area to area.

Fourth, the US DOT requirements for the urban transportation planning process were from the beginning addressed to how the process was carried out. The requirements specified the type of organization to carry out the process, the development of a transportation plan, transportation improvement program, and agreement among the participants on the plan and program. There was no requirement on the outcome. Whatever the State and local officials agreed to was acceptable to US DOT. That changed with the passage of several environmental laws especially the Clean Air Act amendments of 1977. This act required a finding of conformity of transportation plans and programs with established clean air standards. This Act created huge policy and analytical burdens for MPOs in non-attainment areas.

Fifth has been the evolution of participants and decision makers in the urban transportation planning process. In the early years of the Interstate program, engineers communicated to engineers. The Bureau of Public Roads issued Instructional and Policy and Procedure Memoranda to State highway engineers. Decisions on planning and

implementing highway projects was a technical decision making process. With the passage of the Federal-Aid Highway Act of 1962, decisions on highway project in urbanized areas were to be made by the states in cooperation with the local communities, i.e. local elected officials.

The Federal-Aid Highway Act of 1973 required the governors of each state to formally designate a "Metropolitan Planning Organization" for each urbanized area of over 50,000 in population as defined by the Census Bureau. This required the establishment of MPOs in state enabling legislation. Initially, the Policy Boards of MPOs included only local elected officials. But through a series of laws MPO were required to involve local transportation providers including transit agencies, airport authorities, maritime operators, rail-freight operators, Amtrak, port operators, private providers of public transportation, and others within the MPO region.

The decision making process was further democratized with the passage of the Intermodal Surface Transportation Efficiency Act of 1991. It required a federally mandated emphasis on early, proactive, and sustained citizen input into transportation decision making - with special outreach efforts targeted at traditionally underserved populations. Public involvement became a process of two-way communication between citizen and government by which transportation agencies and other officials give notice and information to the public and use public input as a factor in decision making. A new decision model emerged in which public input into the assessment of transportation needs and solutions has become a key factor in most transportation decision making.

Sixth, the urban transportation planning process for many years had been a public sector enterprise. Increasingly though, the public sector is looking to the private sector for creative, cost-saving solutions

to complex transportation problems. Private-sector involvement has increased in design-build projects, intelligent transportation systems, emergency relief, and other program areas. As Federal and State transportation funding continues to be stretched and as needs for efficient surface transportation systems continue to grow, transportation officials are looking for new ways to capture the efficiency and value provided by private industry. Federal officials are now relying on public-private partnerships to reduce traffic congestion, improve quality of the transportation system, and increase the efficiency of the operation and maintenance of the system. Although the public sector usually retains ownership of the facility, the private entity is given additional decision making responsibility for determining how the project or task will be completed or how a particular facility or system of facilities will be operated and maintained.

Seventh, the urban transportation planning process initially focused on passenger travel. Little attention was paid to freight travel. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: recognized the importance of addressing freight needs. It required states and MPOs to provide freight shippers and providers of freight transportation services with reasonable opportunities to comment on transportation plans and transportation improvement programs. At the time that the act was passed few state departments of transportation and MPOs had developed resources for engaging the private sector in planning activities. New approaches are being developed to engage the private sector in the urban transportation planning such as public-private partnerships.

Technical planning procedures evolved as the list of issues lengthened. Early travel forecasting procedures were aggregate, using zonal averages and totals to analyze vehicle traffic. This was the result of limited computer capacity and mathematical procedures. Gradually, these procedures have

become more disaggregate analyzing the movement of individual travelers and vehicles. These disaggregate procedures better reflect travel behavior and allow the analysis of a wider range of policy options. Initial highway travel analysis procedures were joined by a battery of transit analysis procedures in the early 1970s. As the years passed new procedures were developed to evaluate vehicle emissions, energy consumption, safety, noise, land use, traffic operations, ride sharing, pedestrian and bicycle options, economic development, citizen participation, environment justice, demand management, tolling, and more.

The 1962 Highway Act's urban transportation planning provisions launched a new era that marked the transition of the highway program from a rurally oriented, civil engineering based activity to a new framework that has a major urban component, was multi-modal, interdisciplinary, involved a significant role for local officials, and was unique in the federal system. The transportation planning provisions have survived the test of time and the unique legislative requirements defined simply in 1962 as continuing, comprehensive, and cooperative, remain central to the legislated planning process. No other federal program had or has since tied capital expenditures to the results of a planning process giving state and local officials veto over proposed expenditures.

Virtually every major metropolitan area in the world has a technical transportation planning process patterned after that begun in the U.S. However, no other country has replicated the mandatory nationwide urban transportation planning process, and no other country has attempted anything as ambitious as the Interstate program. No other country has devised a scheme that allows state and local officials to allocate transportation formula funds that best serves local conditions, priorities, and needs.

Modifications in the planning process took many years to evolve. As new concerns and issues arose,

changes in planning techniques and processes were introduced. These modifications sought to make the planning process more responsive and sensitive to those areas of concern. Urban areas that had the resources and technical ability were the first to develop and adopt new concepts and techniques. These new ideas were diffused by various means throughout the nation, usually with the assistance

of the federal government and professional organizations. The rate at which the new concepts were accepted varied from area to area. Technically metropolitan transportation planning as practiced today varies by the size of area, but in all instances is data driven, analytically complex and interdisciplinary.



# NATIONAL TRANSPORTATION – TRENDS AND CHOICES

Alan E. Pisarski

(Hyphenated titles were in in those days)

*National Transportation—Trends and Choices* began with Secretary William T. Coleman (he always said call me “Bill”). There never was a more patrician gentleman than “Bill” Coleman, with his vest and gold chain with a pocket watch – someone you would never address as Bill. When he said call me Bill, one answered “yes, Mr. Secretary!”

One way to recognize the pressure that led to T&C was that Secretary Coleman had been receiving many calls from Congress for “a Plan”. I believe it was our immediate Boss, Robert Henri Binder, Assistant Secretary for Policy who said: “to Congress a plan means a map with lines on it!” That is the way that the Interstate came into existence with many lines on maps ultimately coalescing into a national map about 12 years before the 1956 Act that funded it. Coleman added the thought that he wanted a sort of cheat sheet to keep in his desk, so that when a mayor came to visit and said he needed a subway, he could slide open that desk drawer and peek at a list that had yes or no next to that city’s name.

I recall when we were given the charge to start on such a planning document as Pat Webster, the Office Director, and I came back to our offices, I said to Pat this really needs a big think before we jump in, why don’t you come over to my place and we can put our feet up and think together. Pat said yes and I waited quite a while and he never showed. I walked down the hall to his place – and he was at his desk writing (we wrote in long hand on yellow legal pads in those days) – he was on

page three of Trends and Choices! It was really good stuff, and it is part of the introduction in the book today.

Side bar: Arthur L. “Pat” Webster had been Deputy Director under retired Naval Captain Ira Dye, in the Office of Systems Analysis and Information (OSAI) in the Office of the Secretary (I was the Information part). Pat was the technical energy behind so much of what that office did. When Secretary Coleman wanted the plan, an Office of Planning was created with Pat as Director and me as Deputy. Pat was a bundle of energy always plunging ahead with great intelligence – I often thought of him as a fullback running straight ahead into and through the opposing line. Although trained as an engineer at West Point, Pat felt that economics was the comprehensive discipline that provided the logical structure we needed to employ in transportation.

The final team came to about eight of us who produced T&C with strong computing support from outside consulting firms and help from the rest of the OST and the Department. In all, my recall suggests it involved less than two years and about 2 million dollars. Much of the approach was supported by the experience of the OSAI in producing the 1972 and 1974 National Transportation Reports on national investment needs (discussed elsewhere in this series). These documents were a prodigious first multimodal effort in an agency just a few years old and were never properly appreciated. In many ways the data sets and the analytical capabilities in the OST were stronger then than now.

The 400 plus page Trends and Choices product, described as the first national transportation planning document since the Gallatin report to President Thomas Jefferson prepared by Treasury Secretary Albert Gallatin, addressed all aspects of transportation – freight and passenger,

metropolitan, intercity and international, treating demand and supply. The main theme was a focus on making decisions about the future not with detailed statements of what needed to be done or investment costs but airing the options – the trends and the choices – for a broader discussion with the Congress and the American people.

It is important to recognize that the environment for transportation decision making was far more in flux at that time than perhaps any time since. The traditional institutional regulatory regime was coming to an end. The future viability of both railroads and mass transit were serious questions. Issues of petroleum availability were critical. Environmental questions were rising. Transportation logistical questions related to national defense preparedness were of great importance.

T&C focused on 1990 and described, based on trends and forecasts, what conditions would be like in that year, absent policy intercession. It was: “bounded only by the extent of potential problems and opportunities, not by distinctions between what is typically the area of the public or private sector, or of federal or local government responsibility.” Given the period in which we were working, the first Arab Oil Crisis occurred in 1974, energy was a key concern.

One of the hallmark products of T&C, and yet at the time seemingly secondary, was the first ever set of maps showing the nation’s major transportation facilities – a National Transportation Atlas.

These maps stood for a long period as the only comprehensive DOT national-scale transportation facility maps. Since the creation of the Bureau of Transportation Statistics the maps have been updated and expanded and some are available at the BTS website. A fully comprehensive national transportation Atlas would be an immensely valuable DOT product.

## The Legacy of Trends and Choices

As the T&C work continued we were drawing closer to the Presidential elections and the document began to take on something of a statement of what next steps needed to be taken as a second stage of the planning effort. In the final chapter of the document, *The Future of the Planning Effort*, we set out what we saw as the next steps, national hearings, etc., but also technical improvements in data, forecasting, modeling and impact analyses were identified. Eleven key issues were listed for the future, many of which still have relevance today. Much of this could be inferred to have the sense of planning for what would be done in a second Ford Administration which, of course, never came to pass. I must record that Secretary Coleman read every word in the document several times and wrote substantial notes in a very real hands-on effort on his part. The Secretary had massive writing skills as a product of many years in expressing legal opinions and forced us to prove any contentious statements to his satisfaction.

Because the Ford Administration didn’t get an elected term, T&C ultimately took on the flavor of a “going out the door” legacy document by the outgoing Secretary. Many such documents have had that attribute since, in the DOT. The more successful, rather, were those that could be called “coming in the door” documents that laid out the plans ahead for a new Administration. such as the 1990 *Moving America* of Secretary Skinner, led by FHWA Administrator Tom Larson and Deputy Secretary Elaine Chao.

The following Administration, under Secretary Brock Adams, a former Senator, followed two paths: one was to disparage T&C as a dead document, from that “other” administration, and despite substantial demand refused to do a second printing, that’s why copies today are so rare; second, they pursued with us options to do a T&C follow-on document for them. After about a year,

our proposals, refined proposals and re-refined proposals, largely based on that last chapter, ended in something of an impasse with the Public Affairs Office over scope and roles. At that point Pat Webster and I left DOT to join the newly created NTPSC National Transportation Policy Study Commission, chaired by E.G. “Bud” Shuster. Much of the work we had done for T&C was similarly reflected in the thinking of that Commission – the emphasis on rigorous technical content and on sound economic analysis. A year or so later when foreign government teams visited DOT to discuss national analysis and planning they were directed to our offices at the Commission as “the guys who do that kind of stuff!”

Sidebar: Brock Adams had been part of the Senate group that pushed for a Transportation Commission as a way to second guess or override the Ford Administration. When Adams became Secretary in the new Administration he told the Senate in words to the effect that it was ok, one of them was now in charge at DOT, and they did not need to bother with that Commission. The Congress indicated that they now really liked the idea of a commission anyway and elected a Republican from the House as Chair.

T&C took on the aspect of a living document in that it became very popular in the Congress and was often the bane of the Adams’ Administration, constantly being quoted and used as the basis for questions to those in the Administration who came to testify. Some years later, in a subsequent administration, I saw a copy on the FRA Administrator’s coffee table, and asked why he bothered with it and was told that he had been warned by the outgoing Adams team to read it thoroughly because Congress would be asking questions based on its findings.

The T&C approach was the model followed in 2000 by Secretary Rodney Slater who stated in his opening message in *The Changing Face of Transportation*: “Thus we build on the foundation laid down by those who have gone before us, those who carved this path in National Transportation – Trends and Choices 25 years ago”.

More recently it was echoed by Secretary Foxx’s *Beyond Traffic* document, in which he stated:

*In perhaps the most definitive of these surveys, Secretary Coleman, in the 1977 study entitled “National Transportation: Trends and Choices (to the year 2000)” captured the sentiments that have guided our efforts in this work:*

*“National Transportation: Trends and Choices” provides a starting point for that much needed public debate. It is an agenda of national transportation issues and alternative solutions that, from the perspective of the Department of Transportation, appear to have merit. It is not intended as a plan of action, although it encompasses programs and plans that already may have the force of law at various levels of Government. It is intended to be a prospectus of what is possible, practicable, and in the public service.*

It is immensely rewarding to see one’s words come back to us from a contemporary Secretary and to see the T&C document providing context for present thinking in transportation products 40 years later. Pat Webster would be proud and Secretary Coleman would smile.

# **OBSERVATIONS ON THE ESTABLISHMENT OF THE DEPARTMENT OF TRANSPORTATION**

Kevin Heanue, BPR/FHWA 1958-1998

In 1968 I had had ten years of experience with the Bureau of Public Roads (BPR) under the Department of Commerce. My recollection is that the long term employees were positive about their new home in the Department of Transportation, but there was also a wait and see attitude. BPR had originated in the Department of Agriculture in 1896, and then bounced around in a series of agencies during the Depression and WW II. There were some bad times during this period. For example, in 1933, Congress set aside the carefully derived criteria for highway projects and turned the program into a jobs program with no state matching and no system criteria.

Jumping ahead, in 1968 BPR transitioned into FHWA with the establishment of the Department and was on a roll having, with a few hiccups, gotten off to a very good start in implementing the 1956 Highway Act's Interstate Highway System. There were, however, clouds on the horizon. In 1968, the National Environmental Policy Act (NEPA) also passed. BPR had been trying to adjust to the times, implementing the planning provisions of the 1962 Highway Act, creating interdisciplinary teams, embracing the provisions of the Uniform Relocation Act, and initiating the Traffic Operations to Increase Capacity and Safety (TOPICS) to insure that operational and safety problems were not being ignored while the Interstate System was advancing.

NEPA, in particular, presented a major challenge. While there were growing concerns in urban areas, BPR had been able to keep the program moving.

NEPA changed all that. The language of NEPA was so sweeping in regard to process and environmental concerns, that in spite of state and FHWA attempts to grandfather projects that were in various stages of development, federal courts held they had to go back to square one and meet the requirements of NEPA. Virtually every controversial Interstate project was stopped and had to go back and meet the new NEPA process requirements. There was essentially a two or five year or more gap in the advancement of most major projects. FHWA rebuilt the project development process largely on the basis of lessons learned from NEPA case law and projects began to advance.

FHWA management looked for support from the new Office of the Secretary of Transportation. It was nowhere to be found. The new OST withdrew from FHWA the authority to approve environmental documents and in the view of FHWA, became advocates of EPA positions rather than supporting FHWA, a major Departmental component. This adversarial situation continued for many years.

More broadly, as the Department evolved, there was initially a them versus us mentality. I recall Ted Holmes, a senior FHWA official and a legend in the highway program, coming back from an OST meeting irate over the fact that very young new OST staffers with little understanding of the program had tried to inform him of the errors of his and FHWA's ways.

In retrospect, the Coast Guard was always a fringe element, never integrated into the Department. They now have a new home. FAA from day one has resisted all attempts to make them fully integrated into the Department. Even today a review of their website shows few mentions of DOT. Without searching they appear to be the independent agency they once were. I believe the conceptualizers of the Department expected more. The series of "stovepipes" that were pulled together to form a

Department remain largely stovepipes. Several Secretaries tried to form a Surface Transportation Administration. All efforts died before fruition either within the Department or in Congress that was unwilling to yield Committee jurisdiction.

Throughout all this FHWA has been a dedicated participant in the development and evolution of the Department. In my 30 years with FHWA after the Department was established, I received many assignments involving cooperation with OST and the other modes. Never was I asked to frustrate a Departmental initiative.

On the fiftieth anniversary of the Department I believe the Department has been successful, but falls short of the expectations of its founders.

# DEVELOPING A DATA PROGRAM AT DOT

Alan E. Pisarski

When DOT opened its doors on April 1 1967, there existed a substantial body of ad-hoc transportation statistics produced by multiple agencies throughout government. Several of the agencies, the Bureau of Public Roads and the Federal Aviation Agency came into the DOT bringing their modally focused data programs with them. With small exceptions the main body of transportation statistics, largely designed to serve regulatory reporting or administrative needs remained outside the DOT including the programs of the three regulatory agencies – the Interstate Commerce Commission, the Civil Aeronautics Board and the Federal Maritime Commission; the Maritime Administration, which remained in the Department of Commerce; the US Army Corps of Engineers; and, finally, the nation’s main statistical agency the Bureau of the Census. The Bureau, notably, was precluded from collecting data that might duplicate the work of the regulatory agencies. Thus the notion of an overall program of data collection was fragmented and largely independent of any sense of a comprehensive and consistent collection and reporting of transportation statistics.

The Department of Commerce had the power to collect data as part of the High Speed Ground Transportation Act of 1965. That act expired on June 30 1971 but Section 4 which empowered the Secretary of Commerce to collect and provide data was retained. A similar, but broader mandate for data collection appeared also in Section 4 of the DOT Act giving the new Secretary the power to “promote and undertake development, collection, and dissemination of technological, statistical, economic, and other information relevant to domestic and international transportation.”

Fourteen months after the Department’s start a strong letter was received by the Secretary from the House Appropriations Committee indicating that no new funds would be allocated to Transportation Information Planning in the coming fiscal year because: “Last year the Committee called on the Department to ‘develop a more coherent and effective assignment of the responsibilities within the Office of the Secretary and among the administrations for Transportation Information and statistics functions’. There is no evidence that this has been done.” The letter mandated a report to the Committee to be received by Jan 1 1969.

A report entitled TRANSPORTATION INFORMATION, known popularly as the red book, was provided to the Congress in May of 1969 which laid out a five-year comprehensive transportation industry-wide data program to meet the Congress’s and the Department’s needs. I had arrived mid-way thru the production of the report, hired by Robert E. Barraclough, with whom I had worked at the Tri-State Transportation Commission in New York, both of us doing transportation data programs in different sectors. My focus had been on passenger travel behavior and his on land use statistics and the land use determinants of travel.

Barraclough was a geographer from New Zealand with an intense devotion to better transportation information. He was made Director of a new Office of Transportation Information Planning which only lasted a brief period in the vagaries of the start-up years of the Department. Recognizing that the whole concept of transportation as an entity, rather than as separate modal specialties was new, helps make the point that a big part of the data program, was designed to support the policy officers of the Department and the President in their responses to national planning and policy issues. This is unlike many other federal statistical programs focused on producing data for general public use. It was only in that much of what was done for the Secretary and his Policy Officers proved to have value to

other private and public entities that the broader mission was recognized.

The Red Book was a prodigious effort laying out a \$36 million multi-modal economic, geographic and engineering data program addressing travel behavior and investment activities. In the parlance of the book it addressed the flows of persons and goods in the nation, the channels on which the flows occur and the activities that generated the flows. Despite the Congress's demands the document fell on deaf ears in the Department and in the Congress, and the specific program was never officially ordained and no further action by Congress occurred. Whether this was a product of concern about the scale of the undertaking, or indifference to its approaches was never learned.

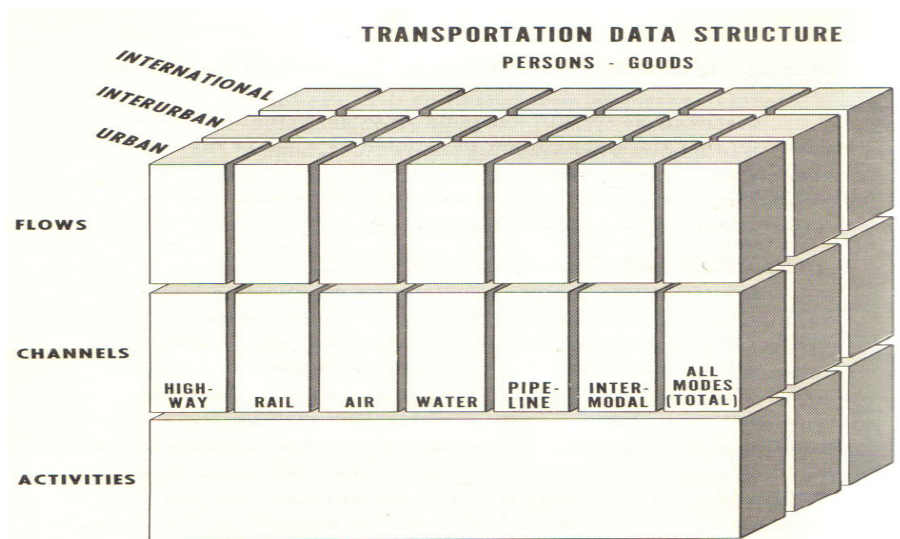


Figure 6: The transportation analysis, forecasting, planning and policy making concerns of government and industry embrace urban, interurban and international transportation by all modes. Needed activities, channels and flows data must be inter-relatable among themselves, between geographic levels (urban, interurban, international), and across all modes of transportation, for the transportation of persons and goods.

This was the beginning of long periods of intermittent indifference and action in the Department. Tracing the history briefly it went like this:

- In the move to DOT the Office of Transportation Information Planning was placed in the Office of the Assistant Secretary for Research and Technology, followed in Sept 1968 by a move to the Assistant Secretary for Policy Development, relabeled the Assistant

Secretary for Policy and International Affairs in 1969 about the time I arrived and the Red Book was written.

- In 1971 the Office was abolished, Barraclough left in frustration, and I became the Chief of the Information Division in a new Office of Systems Analysis and Information under Naval Captain Ira Dye.
- In this period the Office produced the 1972 and 1974 National Transportation Reports, a comprehensive multimodal series of documents based on state reporting. This is documented elsewhere in this series.

- By 1974 the Information Division program had been moved to the Transportation System Center in Cambridge, in a move intended to strengthen the activities of the new center, later the Volpe Center. I refused to move as did my Division staff so the program came down to the staff being reassigned, the program work being done in Boston, while I retained funding control as a Special Assistant to the Assistant Secretary for Policy. Probably the only Special Assistant ever in the Department with his own budget – in this case about \$9 million. So we had gone from an Office to a Division to a Special Assistant in about three years.

- Much of the focus of the work shifted to the Office of Transportation Planning in 1975 which produced *National Transportation – Trends and Choices* for Secretary Coleman as it developed the data support needed for the study. T&C is described elsewhere in this series.

- When Pat Webster and I left the Office of Transportation Planning, and the Office closed, the data program came down to one staff person in the Systems Analysis Office.
- A year or so later the funding of the program was zeroed out by a Congress unhappy with the Office of Policy in OST.
- No national transportation studies, which often drove statistical efforts, were mandated between 1979 and 1989
- Still, the perspectives and the transportation philosophy from the Red Book, the National Transportation Reports and Trends and Choices have guided the data collection philosophy and scope of the Department's programs since.

*A vignette: When Webster and I were at the National Transportation Policy Study Commission, visitors would arrive from European government agencies a bit confused saying they went to US DOT to discuss national planning and they were told that "the guys who do that stuff" were now at the Policy Commission—probably a low point in the Department's history.*

In the short period after the Red Book and the start of T&C there were important milestones in the Department's data collection activities many of which are still ongoing today.

- The ICC had cancelled the Rail waybill statistic program in 1966. Given the funding available in the Department (the \$9 million) and its superior computer data processing skills in the new world of computers we used the ICC's reporting authority to reinstitute the process in 1971 which continues today.
- A national trucking survey was instituted with data program funding and FHWA staff

management – the Department's first such survey.

- National Transportation Statistics an annual report was instituted in 1971 and is an annual product today.
- The key data role of the program in the period was perhaps the two oil boycotts in 1973 and again in 1978, in which we developed the reporting systems for the White House on fuel availability and traveler behavior and responses to fuel curtailments. We also supported OMB in developing fuel allocation plans to be ready were rationing to be required. The great benefit was that the Secretary at this stage was Claude Brinegar, an oil executive and a PhD mathematical statistician, who became the real source of sound information on petroleum in the federal government. DOT's bi-weekly reports to the White House won commendations. This work was moved to the Department of Energy, created as a result of the energy concerns. Their mandated Energy Information Administration has been strongly supported and effective with their 35<sup>th</sup> Transportation Energy Data Book recently published and their annual Energy Outlook very effective information tools, perhaps a model for what DOT's data program could have been.
- A key period occurred as the regulatory agencies, which had been the center of much statistical reporting, were abolished and their data programs ended or moved to the Department. There was a tendency among private carriers to revel in the end of mandated reporting to the ICC and to resist any attempts by the Department to reinstitute those reporting systems.

Perhaps, embarrassingly enough, we might say that 1977 was the peak of national transportation statistical breadth and depth in



the federal government. With a strong Census of Transportation at the Census Bureau, now much diminished, the still viable regulatory agency carrier reporting systems, and many new modal programs operating at the DOT. Note that was 40 years ago!

We entered the 80's in perhaps a data depression where many programs expired, a few hardy programs survived with irregular reporting periods, until ISTEA and the "rosy fingered dawn" when the Bureau of Transportation Statistics was established in the DOT. Driven by a 1990 DOT Statement on Policy, a TRB report, *Data for Decisions*, and the strong interest of Senator Moynihan there seemed to be a rebirth of recognition of the need for information. Optimism was high, and many thought all would be well at last. One of the highlights of that era was the very important role that better data played in the new interest of the Department in freight planning. It was the production of freight flows and the depiction of those flows in national maps that brought a greater credence to the arguments for the need for greater focus on freight issues and concerns, often neglected in past Departmental focus. One very pertinent outcome was to show that the presumed "rust belt" was

not quite as rusty as many thought. The mapping confirmed that there was still vibrant industry activity in that region with massive regional and national freight flows.

Since then, in the second 25 years of DOT, the new BTS has worked hard and produced many valuable products which are basic to the needs of the Department for better information, as shown by the freight flow data mapping discussed just above, but has lacked resources, and like the original data program at the beginning has lacked stability, starting as an Administration with a Director confirmed by the Senate, then to an Office in a new Administration without Director Senate confirmation, and now an office in a newly formed unit in the Office of the Secretary (strangely enough with the same name as when the Transportation Information Program began, in the new Department 50 years ago).

It remains to be seen whether the Department will capitalize on the new world of big data coupled with more intensive surveying to produce the transportation data that the nation needs for massive transportation investments and regulatory policies.

# THE EVOLUTION OF FREIGHT TRANSPORTATION IN THE U.S. DEPARTMENT OF TRANSPORTATION

Gary E. Maring

(with appreciation for the help and many resources and data available in the Department for this effort, particularly in the Office of Freight Transportation Management and Operations at FHWA)

## Introduction

The volume of freight being transported over the nation's transportation infrastructure has grown dramatically over the last 50 years. This is largely attributable to high rates of growth in domestic and international trade. In addition, the cost of freight transportation has decreased dramatically in real terms through deregulation. Just-in-time manufacturing, e-commerce, containerization, and demand for small package service have resulted in shipments of more high-value goods that must meet tight schedules. These changes forced attention on better managing the transportation system through improved operation of both the public and private freight infrastructure and addressing key national bottleneck improvements. Transportation planning at all levels of government had to expand its focus and tools to address the emerging freight challenges and national policy was increasingly concerned with addressing intermodal freight issues to better support our domestic economy and international trade.

## History of Freight Development

The Federal Highway Program in its evolution had little focus on interstate and international commerce. In the depression era, it focused primarily on getting the farmer out of the mud,

in the war years on military deployment, and after WWII responding to the suburbanization of America and the commuting challenges that posed for the highway system. My early career in transportation planning in the late 60s and 1970s was almost entirely focused on passenger transportation challenges. Penetration of the Interstate System into metropolitan areas started to cause massive dislocation issues resulting in efforts to stop freeways and favor mass transit solutions. By the early 1970s, highway planning had to expand to a multimodal focus but this was almost entirely passenger focused. The joint planning regulations issued in 1974, jointly by the Federal Highway Administration and the Urban Mass Transportation Administration, helped drive this focus. Large scale urban transportation planning tools emerged in this period to model metropolitan passenger flows and help design multimodal passenger networks to handle the commuter surge of this period. There were periodic calls for more attention to freight in the planning process; a number of urban freight studies were conducted but freight never got mainstreamed in the planning process during these early years.

A parallel development that was largely oblivious to me in my planning world was the emerging national crisis in the private freight transportation sectors, most notably the state of the nation's freight railroads and trucking in a regulated environment. This challenge led to calls for the deregulation of the commercial transportation sector. Government regulation had become out of step with the needs of commercial carriers to meet the rapid growth in domestic and international commerce. This concern resulted in a bipartisan effort in Congress and the Carter Administration to develop deregulation proposals and this focus carried on into the Reagan Administration. Four separate pieces of deregulatory legislation were enacted between 1978 and 1984. These included the Airline Deregulation Act of 1978, the Staggers Rail Act of 1980, the Motor Carrier Act of 1980,

and the 1984 Shipping Act. All employed the same basic approach of focusing on easing restrictions on market entry and exit, removing price controls, and allowing for differential services. The effect of deregulation was to remove the modal and jurisdictional barriers among freight carriers. The result was the birth of the intermodal transportation industry and dramatic growth in freight transportation with technological innovations such as cross-country double-stack rail service. Trucking, both truckload and less than truckload, grew dramatically to meet the nation's increasing logistics demands.

It was in the 1980s that I was increasingly drawn into freight issues as I was appointed as a Senior Executive in the FHWA Office of Policy. Two of the key issues that emerged were Truck Size and Weight policy responding to the need for trucking to be more productive as demand grew dramatically and Cost Allocation dealing with issues of fees paid by various passenger and freight users into the Highway Trust Fund. Milestone legislation in 1982, the Surface Transportation Assistance Act, resulted in increased user fees on all sectors with a new diesel differential fuel tax and other heavy vehicle use taxes applied to heavy trucks. Truck Size and Weight increases were enacted. At the same time the general gas tax was raised five cents and for the first-time funds were set aside for transit within the Highway Trust Fund. The 1982 Act spurred more policy studies related to freight around issues of user fees, size and weight, and economic regulation. Although the Department was already moving on trucking deregulation at the federal level much remained to be done at the State level. These efforts, working through the National Governors Association, resulted in much voluntary state deregulation but in the end some Federal preemption of State trucking regulation was needed and justified under the Constitution's Commerce Clause. Interstate and international commerce was changing dramatically and we in the Department were in a catch up 'mode'.

These developments became a major defining theme behind the federal transportation policy debates in the late 1980s that lead to the enactment of ISTEA. Several of us worked on Secretary Skinner's National Transportation Policy effort in 1990-91 which was an important precursor to the upcoming reauthorization. With the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, transportation planners were given a mandate to consider freight transportation requirements when developing transportation plans and making investment decisions. ISTEA also marked a renewed awareness of the importance of freight transportation and an integrated, multi-modal transportation system to sustain economic growth. The preamble to the Act highlighted the linkages among economic productivity, freight and goods movement, and intermodal transportation. In part, it said: "It is the policy of the United States to develop a National Intermodal Transportation System that is economically efficient and environmentally sound, provides the foundation for the Nation to compete in the global economy, and will move people and goods in an energy efficient manner....The National Intermodal Transportation System shall consist of all forms of transportation in a unified, interconnected manner... while promoting economic development and supporting the Nation's preeminent position in international commerce.... The National Intermodal Transportation System shall include a National Highway System ... [of] roads which are essential for interstate and regional commerce and travel, national defense, intermodal transfer facilities, and international commerce and border crossings.... The National Intermodal Transportation System shall provide improved access to ports and airports, the Nation's link to world commerce..." By encouraging multimodal coordination in public and private freight planning and investment in ISTEA, Congress hoped to stimulate national freight productivity that would spur trade, economic development, and international competitiveness.

Further, the truck size and weight ‘armistice’ in ISTEA along with the general improving health of freight business for all modes helped focus energies on modal cooperation rather than modal competition.

ISTEA also created the Office of Intermodalism, which became a focus for discussion of freight-oriented policies in the Department, and BTS, which started the Commodity Flow Survey and other data programs that eventually became the foundation for the Freight Analysis Framework which I discuss later. Freight policy language in ISTEA quickly raised expectations in the freight transportation sector. However, the limits on the Federal-aid funding programs made it difficult to prioritize and fund freight-specific projects, particularly when they were competing for funding with more traditional passenger oriented projects. In addition, the devolution of planning and decision-making to the state and local level and the emphasis in ISTEA on thinking and acting locally complicated freight transportation planning and project development. The perspective of state and local planners is limited by statute to the area over which they have jurisdiction. However, freight systems tend to be national or global in scope. The National Highway System designation helped address this issue, but only within the highway system and its intermodal connectors.

I was increasingly drawn into these freight issues in FHWA during the 1990s with implementation of ISTEA. As part of a major reorganization of the agency in 1999, the decision was made to create a Freight Office in FHWA for the first time and I was asked to be its new Director. Among the first things we did upon creating the Office of Freight Transportation Management and Operations in FHWA in early 2000 was to convene a private sector advisory group from the various freight modes. I worked with representatives from the Office of Intermodalism, FRA, and MARAD to reach out to all the private sector modes. This led to an increasing

number of domestic and international conferences and working groups to grapple with the trade and intermodal freight challenges that were emerging. The Chicago CREATE project was a prime example of the freight bottlenecks that began to be raised to national attention in this period. The confluence of the four domestic and two Canadian railroads along with AMTRAK and a large commuter rail system in Chicago caused huge rail bottlenecks and cross town truck drayage of containers between the Western and Eastern railroads caused much congestion on the street system. I attended one of the first meetings of the Department with private railroad representatives in 2000 in the Chicago area and viewed a 30-minute fast speed simulation of a full day of rail movements in Chicago. What popped out to me, was that the freight rail system largely shut down 3 hours in the morning and 3 hours in the afternoon to accommodate passenger rail movements. This was becoming intolerable as Chicago emerged as a national bottleneck for domestic and international trade. This was to result in a focused Federal, State, and local investment in improving the rail flows and intermodal connections in Chicago.

As more anecdotal information about national bottlenecks emerged, the need for a data driven analytical approach became evident. The Freight Office, in cooperation with the other modes, therefore undertook development of the Freight Analysis Framework (FAF) to better understand the complex pattern of domestic and international freight flows. The initial tool integrated data from a variety of sources to help create a national picture of freight movement along major corridors connecting states and major metropolitan areas. The BTS Commodity Flow Survey increasingly became the major data source underpinning the FAF. The national freight flow maps created through the FAF quickly caught the attention of a wide audience of public and private sector freight stakeholders and helped focus national attention on key bottlenecks in the system. The FAF has become a remarkable national and state tool for freight planning and policy analysis, and more than

anything else, I believe, has enabled us to develop the proactive national and state freight policies and programs we have today. This, I think, is a big win for data and I know Alan Pisarski and Rolf Schmidt will be happy for the data plug!

## **The Current State of Play in Freight**

Subsequent legislation incrementally increased the attention on freight in the planning process and in the Federal-aid programs, but with the implementation of the FAST Act in December 2015, Freight has finally come front and center within the Department. The Fast Act, for the first time, enacted a mainline Federally apportioned program for freight, and of course there are many other provisions detailed below by my former Freight Office in FHWA. Their briefing material highlights that FAST contains the following freight provisions:

- *Establishes a National Multimodal Freight Policy that includes national goals to guide decision-making.*
- *Requires the Development of a National Freight Strategic Plan to implement the goals of the new National Multimodal Freight Policy. The National Freight Strategic Plan will address the conditions and performance of the multimodal freight system, identify strategies and best practices to improve intermodal connectivity and performance of the national freight system, and mitigate the impacts of freight movement on communities.*
- *Creates a new discretionary freight-focused grant program that will invest \$4.5 billion over 5 years. This new program allows States, Metropolitan Planning Organizations (MPOs), local governments, tribal governments, special purpose districts and public authorities (including port authorities), and other parties to apply for funding to complete projects that*

*improve safety and hold the greatest promise to eliminate freight bottlenecks and improve critical freight movements.*

- *Establishes a National Highway Freight Program. The Act provides \$6.3 billion in formula funds over five years for States to invest in freight projects on the National Highway Freight Network. Up to 10 percent of these funds may be used for intermodal projects.*
- *Includes new authorities and requirements to improve project delivery and facilitate innovative finance. The FAST Act includes provisions intended to reduce the time it takes to break ground on new freight transportation projects, including by promoting best contracting practices and innovating financing and funding opportunities and by reducing uncertainty and delays with respect to environmental reviews and permitting.*
- *Focuses on freight performance including the collection of performance measures for leading U.S. maritime ports. The FAST Act requires the Bureau of Transportation Statistics (BTS) to collect and annually report performance measures for the nation's top 25 ports, as measured by three methods (total tonnage, containers, and dry bulk tonnage).*

## **Conclusions**

As I look back over my more than 50-year career, coming at the time of the 50-year milestone for the U.S. Department of Transportation, I think we can be proud of our efforts in the Department to unleash freight transportation and help make our nation the most competitive in the world. Little did I know when I entered the Bureau of Public Roads in 1964, as a highway engineer trainee, that my career would emerge as it did; but I wouldn't trade it for anything.