

Commission Briefing Paper 4K-01

Evaluation of Time Currently Required to Implement Rail, Highway, Transit, and Port Projects from “First Thought” to Operation

Prepared by: Section 1909 Commission Staff

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Introduction

This paper is part of a series of briefing papers to be prepared for the National Surface Transportation Policy and Revenue Study Commission authorized in Section 1909 of SAFETEA-LU. The papers are intended to synthesize the state-of-the-practice consensus on the issues that are relevant to the Commission’s charge outlined in Section 1909, and will serve as background material in developing the analyses to be presented in the final report of the Commission.

This paper summarizes information developed from investigations conducted by the Federal Highway Administration and the Federal Transit Administration (FHWA and FTA, respectively) on the amount of time required to complete the environmental documentation and approval process that is required under the National Environmental Policy Act (NEPA) for federally-funded surface transportation projects. It also summarizes more limited research by FHWA on the time required to advance major highway projects from early development to operation.

Background and Key Findings

The findings presented in this paper are drawn from studies into the time required to complete transportation projects that have been undertaken by FHWA, FTA, and others. (There have been no similar studies of either Rail or Port projects commissioned by the Federal Rail Administration (FTA) or the U.S. Maritime Administration (MARAD). The following Key Finding are extracted from the analyses presented in the FHWA reports *“Evaluating the Performance of Environmental Streamlining: Development of a NEPA Baseline for Measuring Continuous Performance,”* and *“Evaluating the Performance of Environmental Streamlining: Phase II.”*

- Because of the complexities associated with the development of transportation projects, there are only a limited number of evaluations that have even attempted to examine the timeline for projects from a starting point preceding the requirements of the NEPA all the way through to completion and opening for public use.
- FHWA investigated 100 surface transportation projects with approved Environmental Impact Statements (EISs) and opened for public use during the 1970s, ‘80s, and ‘90s. Completion of the NEPA process for these projects required a mean of 2.2 years for completion in the 1970s, 4.4 years in the 1980s and 5.0 years during the (early) 1990s. The overall mean was 3.6 years.

- In terms of the ‘complete’ amount of time required for all 100 projects to be opened to use by the public, the mean length of time was 13.1 years.
- In a follow-up to the preceding investigation, FHWA examined 250 surface transportation projects whose NEPA processes started and finished between 1995 and 2001. The **median** length of time for preparing and completing an EIS pursuant to NEPA for projects in this study was 4.7 years and the **mean** time was 5.1 years.
- An FTA study of 37 mass transit EISs completed between 1992 and 2002 showed a **median** completion time of 3.8 years, and a **mean** completion time of 4.3 years.

Developing Transportation Projects Under the NEPA Process

The National Environmental Policy Act of 1969 (NEPA) marked the beginning of the environmental review process for all federal actions, including the use of federal funds for construction of highway and mass transit projects falling under the purview of the U. S. Department of Transportation and its modal Administrations. Under NEPA, applicable projects are assessed in relation to the environmental conditions of the area, and the impacts that various project alternatives would have upon those environmental conditions. It is the intent of the NEPA process to ensure that informed decision-making with respect to the environment occurs when considering the need for, and proposed alignment and design of transportation projects. While the NEPA process has had an overall benefit in addressing the wide array of public interests that can be impacted in some manner by transportation decisions, the NEPA project development process has been criticized because of the perception that it is the main cause for delay experienced in the construction and delivery to the public of transportation projects. This perception is particularly strong when an Environmental Impact Statement (EIS), generally the most comprehensive and time-consuming environmental document required under NEPA, is involved.

Before the effect of the NEPA process on overall timing and cost of project delivery can be assessed, it is important to understand how NEPA integrates into the overall project delivery process. The elements that are generally considered to be included as part of the full project delivery process are: preliminary engineering (when the requirements of NEPA are applied to the proposal), final or construction engineering, right-of-way acquisition, and construction. These four major elements have historically been used and recorded as part of FHWA's Fiscal Management Information System (FMIS) which is a financial database of all highway projects dating back to the 1940s that have been financed using federal funds. Other elements of the overall process such as scoping and NEPA environmental documentation also exist, although they would likely be integrated into one of the four basic elements such as preliminary engineering. Environmental permitting is another element of the overall process, although that element would also likely be incorporated into one of the four basic elements such as preliminary engineering or, more likely, final engineering.

When a project can be said to have “started” is a more difficult question to answer. Broadly speaking, the project delivery process begins at the time that a project is advanced from a planning phase to an actual committed project, which may or may not begin with the inclusion of the project on a Transportation Improvement Program (TIP) or a State Transportation Improvement Program (STIP). Typically, the point at which Federal funds are first allocated at

the project level usually initiates the preliminary engineering stage and is when a “project” is considered to have become a viable proposal. Tracking the genesis of a project prior to its inclusion into a recognized program has not been common practice by sponsors of transportation projects.

Since a project’s compliance with the requirements of NEPA is a subset of one or more of the four major elements of the project development process, the time that it takes to fulfill all of the requirements of NEPA naturally could have a direct impact on the timing of the overall process. Any delays in receipt of a Record of Decision (ROD), which is the final official step of the NEPA EIS process, extend the time required for determining exactly what will be designed and built. The requirements of both NEPA and other laws for the protection of resources tend to magnify the perception that the NEPA process is at the root in complicating a project’s approval and delivery.

During the 30+ years since NEPA was signed into law, stakeholders in the transportation project delivery process have questioned the effect that it has had on the timely delivery and overall cost of transportation projects. Although it is a commonly accepted fact that the NEPA process, especially the preparation and approval of EISs, can often take several years to complete, the time required and the relative costs incurred to complete the entire highway project delivery process has not been well documented or understood. At best, studies of the environmental process have looked at that process directly, but generally not relative to the construction or other phases of the project. Most of the information available concerning the time required to complete a project has come from anecdotal sources, generally focused on single projects. In this regard, it is not evident what portion of the schedule and cost of the entire project delivery process is attributed to NEPA compliance requirements, in comparison to other potential sources of process delay such as funding shortages, compliance with environmental permitting requirements, changes in design, contractor delays, lawsuits and injunctions, etc.

Evaluation of Time Requirements for Transportation Projects

There have been only a handful of studies in recent years that examined the time period for the delivery of transportation projects, or examined what component of that entire time period is attributable to the NEPA process. Some of the key research studies in this regard to date are presented below. (Note: this list of studies does not necessarily reflect a complete bibliography of related research.)

1. The General Accounting Office (GAO) presented a report to Congress in 1994 concerning the effects of the NEPA and the Clean Water Act’s Section 404 permitting processes on the implementation of highway projects, as well as any differences in those effects resulting from attempts to integrate both processes.¹

The GAO study stated that "on most highway projects, FHWA and the states have taken from 2 to 8 years to complete the NEPA and section 404 reviews." As part of the study, seven FHWA divisions and 13 state DOTs were surveyed, resulting in the identification of 76 highway projects for which environmental reviews were conducted and completed during the 1988 - 1993 period. **The study concluded that the average NEPA review process among all 76 projects took 4.4 years. Of that total, 32 projects also required Section 404 permits, and averaged 5.6 years**

to complete both the NEPA and Section 404 permit reviews under separate review processes.

2. The American Association of State Highway and Transportation Officials (AASHTO) and the National Cooperative Highway Research Program (NCHRP) published a study in October 2000 that focused exclusively on Categorical Exclusions (CEs) and Environmental Assessments (EAs).ⁱⁱ Forty state Departments of Transportation (DOTs) were contacted by the study managers for information, and 33 DOTs responded. A majority of the DOTs responding reported some CE and EA process-related delays, even though these types of environmental documentation are typically associated with projects resulting in less significant environmental impacts than EIS projects.

Based on the information on 101 CE and EA projects supplied by the responding DOTs the AASHTO study concluded that **when delays in the project development process did occur, the result was a tripling of the time required to conclude the NEPA process: for CEs, from 8 months to just under 24 months, and from 14 months to about 3.5 years for EAs.** It was further determined that the legally-mandated environmental requirements that contribute the most to delays in preparation of both CEs and EAs are those contained in the processes for Section 4f of the DOT Act (public parks and recreation areas, and historic resources), Section 106 of the National Historic Preservation Act (historic and archaeological resources) and Section 404 of the Clean Water Act (wetlands). These results were based on expert opinion of DOT staff and not on actual project data.

All of these studies represent a starting point for establishing a baseline condition against which to evaluate future environmental streamlining efforts. However, the above studies acknowledged that quantifiable data for conducting a more detailed statistical analysis were not readily available, and would require extensive effort in order to collect and analyze such data in a statistical fashion.

Evaluation of Time Requirements by FHWA

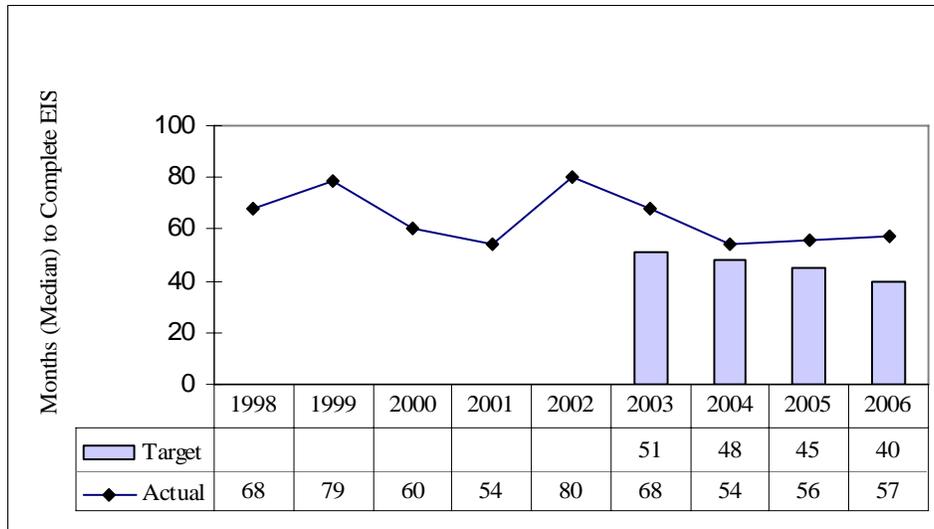
FHWA undertook its own efforts to develop a baseline condition for evaluating future environmental streamlining efforts. The following presents summaries of the main investigations.

1. In 1998, FHWA began reviewing and compiling data on the time frames for EIS projects with Records of Decision (ROD) were approved in that year.ⁱⁱⁱ The starting points for these projects were the dates their Notices of Intent (NOI) were published in the Federal Register. Of the 37 such projects that were completed in 1998, 19 took from 4 to 6 years to complete NEPA; 12 took 7 or more years for completion; and 6 were completed in 3 years or less. **The average of elapsed time between a project's NOI and ROD was found to be 67 months, or 5-1/2 years, while the median time for project completion was 5 years.**

FHWA has continued compiling information on completed projects with EISs annually from 1999 through 2006. Beginning in 2002, FHWA developed and implemented an internal environmental document tracking system (EDTS) for Environmental Assessments (EA), and Environmental Impact Statements (EIS). The system was developed to support the

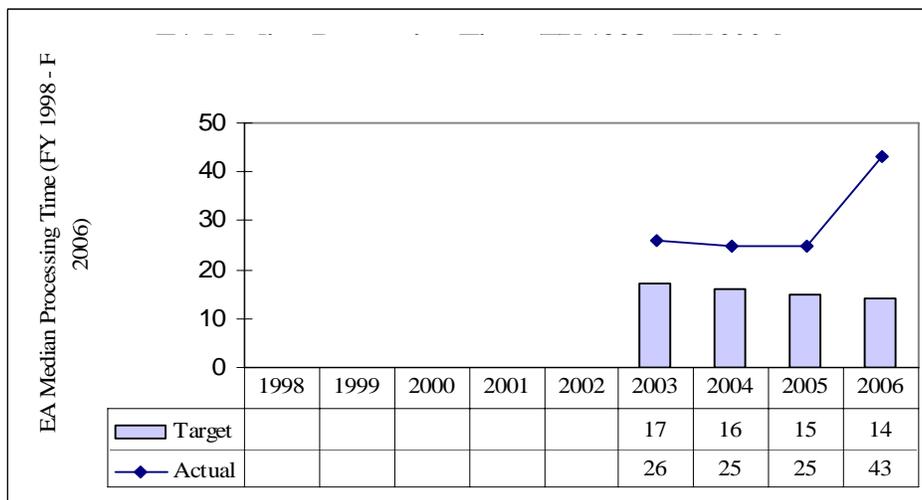
Environmental Streamlining and Stewardship "Vital Few" objectives. The ability to accurately track the length of time required to complete the NEPA process is an essential component of the environmental streamlining performance measure. The EDTS tracking system helps FHWA identify some of the factors that may affect the efficiency of NEPA project delivery. EDTS also aids FHWA's ability to monitor project progress between major milestones, and to accurately determine the total processing time from initiation of an EIS and EA to the approval of the final decision document. (See Figures 1 and 2)

Figure 1. EIS Median Processing Time (FY 1998 – FY 2006)



Source: FHWA Division Offices and Environmental Document Tracking System (EDTS).

Figure 2. EA Median Processing Time (FY 1998 - FY 2006)



Source: FHWA Division Offices and EDTS.

2. Similar to the EIS baseline effort, FHWA also conducted a study to initiate a baseline timeframe for projects involving a Finding of No Significant Impact (FONSI) or a Categorical Exclusion (CE). This database was compiled from information provided by 27 FHWA Division

offices. Of these, 18 divisions indicated that it generally takes less than 2 years to process a FONSI, while 8 divisions reported that it generally takes between 2 to 3 years. In the case of CEs, 22 divisions indicated that it takes less than one year to process a CE (18 divisions reported that 6 months or less for processing was typical). **Based on the responses received, FHWA has estimated that the typical time frames for completing these types of environmental documents were about 18 months for a FONSI and 6 months for a CE.**

3. In 2002 FHWA, using the information gathered on projects that completed (signed ROD) the NEPA process during Fiscal Year 2002 (FY 02), undertook a quick survey of its Divisional offices, asking about the reasons projects took as long as they did to reach completion. Based on the information for the projects completed in FY02, two groups of projects were developed: those completed in 3 years or less, and those which took 5 years or more to complete (3 years or less was the FHWA Environmental “Vital Few Goal” for timely completion of NEPA, while 5 years was identified by the House Subcommittee for Transportation and Infrastructure in 2000 as indicating delay for a project.) For FY 02 there were seven projects that completed NEPA in 3 years or less, and twenty-six projects that took 5 years or more. Two separate questionnaires were developed, one for each category of project. The Environmental Specialists in the FHWA division offices for the pertinent states were requested to provide the answers to the questions.

The results were intriguing: **for projects completed in 3 years or less, the primary reason (43% of all factors) attributed to efficient project completion was Early Agency Coordination**, while the leading cause (24% of all factors) for extending the time to completing was the **reduction of a project’s priority by the sponsoring agency**. Because of the small size of the project sample as well as the subjective nature of the questionnaire’s methodology, however, the results of the analysis were not accepted as conclusive.

Section 1309, titled “Environmental Streamlining,” of the Transportation Equity Act for the 21st Century (TEA-21) directed the Department of Transportation to develop and implement a coordinated review process for highway construction projects. The review process would be applied to projects that require either the preparation of environmental impact statements (EISs) or environmental assessments (EAs) under the National Environmental Policy Act (NEPA), or the conduct of any other environmental review, analysis, opinion, or issuance of an environmental permit, license, or approval by operation of Federal law. Section 1309’s charge for a coordinated environmental review process stemmed from the perception of the environmental review process as a major cause of delays in implementing transportation projects.

As a result of Sec. 1309’s emphasis on a coordinated environmental review process, the FHWA and the Louis Berger Group undertook a two research studies whose purpose was to provide a better understanding of the impacts of the NEPA process on the total time involved in completing a Federal-aid highway or bridge project for use by the public.

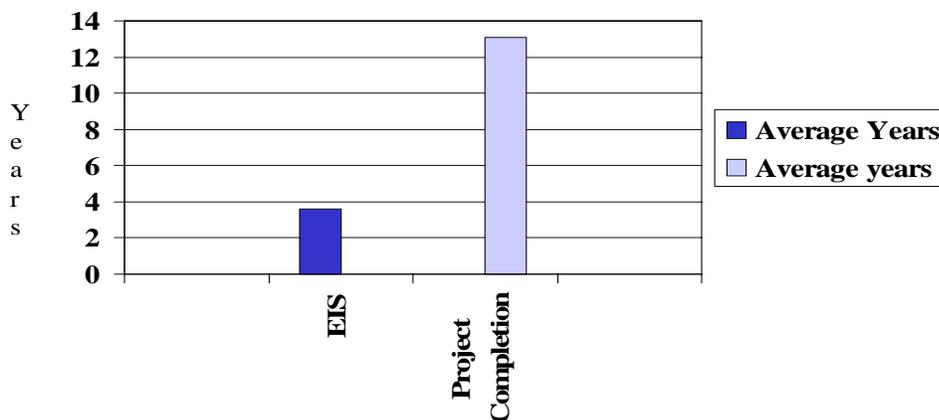
1. The first study, entitled *“Evaluating the Performance of Environmental Streamlining: Development of a NEPA Baseline for Measuring Continuous Performance”* was designed to provide a more comprehensive, less subjective, and statistically-based approach to identifying NEPA process delays and evaluating their impact on time and cost of the overall project delivery

process than any other research effort to date. Besides examining the NEPA process's implications on the total project delivery process, the study also attempted to provide a statistical analysis of the individual factors influencing the amount of time required for the NEPA process for discrete projects.

In brief: the study focused only on highway projects for which EISs had been prepared. The sample consisted of 100 Federal-aid highway and bridge projects, all of which were open to the public by the time the study began. (A sample size of 100 projects had been predetermined to be used for this study since such a sample was considered to be sufficiently large to avoid sampling error.) Projects were drawn from those completed during the 1970's, 1980's, and 1990's.

The descriptive statistics on the length of the NEPA process formed the core of the study's findings. The results of the study indicated that, **for the projects in the sample and over the course of approximately 30 years, the average time to complete an EIS for a transportation project was approximately 3.6 years. By comparison, the mean length of time for the completion of the project was approximately 13.1 years.** Put another way, for the sample's projects, **completion of the NEPA process accounted for approximately 28% of the overall time for project development.** (See Figure 3)

Figure 3
Length of Time for Preparing EIS
Versus Time for Project Completion



Source: Report by LBG, January 2001

For the complete study, see: <http://environment.fhwa.dot.gov/strmlng/baseline/index.asp>

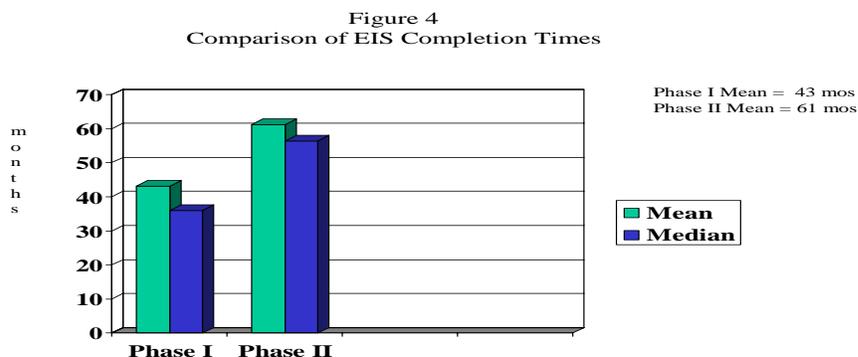
2. Following the publication in January 2001 of the above FHWA-Berger study, FHWA determined that a companion to that study should be undertaken. This new study, entitled "Evaluating the Performance of Environmental Streamlining: Phase II," maintained the basic intent of the previous study, which was the developing and refining of NEPA process baseline time frame in order to be able to measure continuous performance of environmental streamlining

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efforts. The purpose of this Phase II NEPA baseline study was, at least in part, to ascertain if the results found in Phase I would be repeated, or if a comparative assessment could be made between the two sets of results, thereby further identifying the baseline history of the length of time to complete the NEPA EIS process.

Because of difficulties experienced in the first study in obtaining certain data, the Phase II study revised the parameters of the projects to be examined. Changes included: basing the study sample on all projects which completed the NEPA process during the period 1995-2001; eliminating the “open to public use” requirement for including a project into the sample; and eliminating from further consideration any factors found in the Phase I study to have little effect on the time for completing the NEPA process.

Based on the information on projects gathered for the Phase II study, **the length of time involved in fully complying with the NEPA process has continued to increase in recent years**, in comparison with the times recorded in the preceding evaluation. The Phase II study also concluded that any variations between Standard Federal Regions in projects’ NEPA completion times have become much more uniform based on the data from the project sample (the previous FHWA-Berger investigation reported a substantial variation between regions in the length of time for projects to fully comply with NEPA) – **although differences in time requirements are still present, primarily between transportation projects occurring in the coastal states versus those in the interior, “heartland” states.** (See Figure 4)



The study was not, however, able to achieve the identification and confirmation of factors and conditions that may have a direct or indirect impact on the NEPA process. Although that process seems to vary by broad geographic region, it does not seem to vary in relation to the majority of other variables that were tested in the study’s data set. Because of the lack of statistical variation in the length of the NEPA process when considered in relation to other project- and process-related factors, the study suggested that a possible conclusion was that the NEPA environmental review process may have become more strongly affected by external social, economic, and attitudinal factors associated with broad geographic regions of the country.

For the complete study, see: <http://environment.fhwa.dot.gov/strmlng/baseline/phase2rpt.asp#ex>

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Evaluation of Time Requirements by FTA

The FTA also undertook an examination of the NEPA time requirements for the projects it supports, “*A Review of the NEPA Process for Major Transit Projects (1992-2002)*” (Office of Planning, FTA, October 2002). The reasons for the study were two-fold: First, information developed would be used in the Administration’s compliance with Section 1309 of TEA-21 (see above). Secondly, the investigation was to provide a record of the history of the FTA’s environmental program for future development or policy, guidance, and training. The study had three objectives, two of which are relevant to this Briefing Paper:

- Determine the length of time required to complete the NEPA process for major transit projects;
- Determine the extent to which environmental and non-environmental impacts and factors affect the time-to-completion for major transit projects.

In examining the length of time to complete the NEPA process, the FTA study used EIS project time-parameters similar to FHWA’s data collections: a project’s “start” was designated by the publication of its NOI, while the “end” was the date the ROD was issued. Thirty-seven major transit projects requiring EISs and developed over the period 1992 – 2002 were examined by the survey; **the average time to complete the NEPA process for the project sample was 4.3 years, and the median time was 3.8 years.** No significant trend in either increasing or decreasing the time needed to complete a project’s environmental review was noted over the 10-year period reviewed.

Regarding the extent to which environmental and non-environmental factors affect the time required for major transit projects to complete the NEPA process, while certain issues (such as historic preservation and local public controversy) were associated with a large portion of the sample projects, few obvious trends emerged as a result of the study’s examination of environmental/non-environmental factors. The data provided no conclusive evidence that the environmental/non-environmental factors noted in the study resulted in longer NEPA process completion times.

ⁱ U.S. General Accounting Office, *Highway Planning – Agencies Are Attempting to Expedite Environmental Reviews, But Barriers Remain*, RCED-94-211. Report to the Chairman, Subcommittee on Transportation, Committee on Appropriations, House of Representatives, August 2, 1994.

ⁱⁱ TransTech Management, Inc., *Environmental Streamlining: A Report on Delays Associated with Categorical Exclusion and Environmental Assessment Processes*. Prepared for the American Association of State Highway and Transportation Officials Standing Committee on Highways and the National Cooperative Highway Research Program, October 2000.

ⁱⁱⁱ <http://www.fhwa.dot.gov/environment/Basesum.htm>

In addition to the background and federal program information cited in the paper, two areas deserve additional mention, with the goal of “consciousness raising” both for MPO management and federal agencies that participate in MPO activity:

MPO Outreach to Industry: This region’s experience suggests that a pro-active approach is necessary to engage the private sector in ongoing planning activity. Businesspeople – especially from smaller firms – often have difficulty taking the time to participate in standing committees or to attend MPO meetings, hearings, etc. Targeted outreach by MPO staff or consultants, use of trade associations or chambers of commerce, and other outreach strategies tailored to this constituency should be encouraged to ensure that insights from this constituency are brought to the MPO table.

Data Gathering: One perennial concern in this region is the thinness of data on freight movements and requirements relative to commutation and other passenger travel. The proprietary nature of commercial shipping information and other factors contribute to this problem. In this region, absence of more robust data on freight movements has the inadvertent effect of handicapping efforts to analyze current freight needs and to project future requirements relative to planning for auto and transit service.

USDOT can help by working with MPOs and state departments of transportation to ensure state and local planners are conversant with data gathered at the federal level. The federal government can facilitate exchange of “best practices” information to showcase effective examples of freight data gathering (and related planning applications) for both MPO/State multi-year program planning and development of specific projects.

CONSOLIDATED COMMENTS FROM MEMBERS OF THE BLUE RIBBON PANEL OF TRANSPORTATION EXPERTS - PAPER 4K-01

One reviewer commented as follows:

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The lack of reliable freight data on a regional and national level is one of the major difficulties for capital and planning decisions.