CAUSES AND EXTENT OF ENVIRONMENTAL DELAYS IN TRANSPORTATION PROJECTS

Requested by:

American Association of State Highway
and Transportation Officials (AASHTO)

Standing Committee on the Environment

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INTRODUCTION

Over the last several decades, federally mandated analysis of environmental impacts has become a significant component of the delivery process for large transportation projects. Reports by the Federal Highway Administration (FHWA) and the General Accounting Office (GAO) suggest that environmental reviews required by the National Environmental Policy Act (NEPA) and other federal laws account for between 19 to 40 percent of the total delivery time for major projects.[1] The length of time now required to move major projects from planning to construction varies between 9 and 19 years according to GAO.[2]

Thorough consideration of environmental impacts during project planning has helped state Departments of Transportation (DOTs) reduce the adverse effects of their projects on human and natural environmental quality. Many transportation stakeholders, however, seek to speed up project delivery while maintaining environmental quality by streamlining the environmental review process. In particular, Section 1309 of the 1998 Transportation Equity Act for the Twenty First Century (TEA-21) emphasizes the importance of environmental streamlining efforts.

Few attempts have been made to rigorously quantify the pervasive, but anecdotal evidence of environmental delay experienced by state DOTs. For example, FHWA estimates that an EIS typically takes 43 months, but the share of this time attributable to environmental delays is unknown.[3] Better understanding of the causes and extent of delay is hindered in part because state DOTs do not typically record this information, though individual project managers are readily able to provide it upon request.

To improve knowledge on this topic and inform the debate on streamlining, the American Association of State Highway and Transportation Officials' (AASHTO) Standing Committee on Environment (SCOE) requested a survey of its state DOT members to learn more about the characteristics of environmental process-related delay for major projects, based on information directly from state DOT project managers about their most recent projects.[4] This study reports on the results of a survey of state DOTs conducted in Summer 2003.

[1] In FHWA, *Evaluating the Performance of Environmental Streamlining: Development of a NEPA Baseline for Measuring Continuous Performance*, (2001) mean time to complete NEPA for an EIS is estimated at 3.6 years. GAO testimony to US Senate indicates that the "typical time necessary to complete… major new construction highway project" is 9-19 years.

[2] Testimony before Committee on Environment and Public Works, Katherine Siggerud, Acting Director, Physical Infrastructure Issues, GAO, GAO 02 1067T, September 19, 2002

[3]

[4], Survey participants were prompted to consider delay as any additional time required to reach a ROD as a result of environmental process-related hindrances.

The survey documents information about the causes and extent of delay, if any, for the most recent final EIS document in 31 states and draws on this information to provide five short case studies of individual project experiences.[5]
The objectives of the survey were to identify:

- An estimate of the median time required to complete NEPA requirements for projects reviewed,
- An estimate of the share of projects reviewed that experience environment-related delays,
- An estimate of the time environmental delays add to project development for projects reviewed, and
- An assessment of the most common causes of delay for projects reviewed.

Answering these questions requires detailed review of individual project histories. For this study, state DOT project managers were approached directly to collect all historical data and information. By gathering information directly from project managers, greatest accuracy was ensured. Focusing the study only on states' most recent projects, about which staff could readily recollect key facts, further strengthened accuracy. In addition the EIS preparation policies and procedures better reflect current policies and practices, making the study results more relevant to policy-makers.

The remaining sections of this report address 1) a general overview of the EIS documents surveyed, 2) the median time required to complete NEPA-related reviews, 3) the share of projects studied that experience environment-related delays, 4) the median time these delays add to EIS preparation, and 5) an assessment of the major causes of hindrances. A set of brief project case studies follows the Conclusions section of the report, and a copy of the survey instrument is included in Appendix A.

OVERVIEW OF STUDY

There exists no centralized source of data or information about delays experienced by DOTs during completion of National Environmental Policy Act (NEPA)-related activities. Most DOTs do not even formally track such information internally, however detailed histories for recent EIS documents can reliably be obtained from DOT staff. Even defining "delay" is difficult. The complexity of the project development process means there are no rules of thumb for the standard amount of time required to complete environmental reviews; this time will likely vary from project to project and state to state. For this study, we asked survey participants to self identify whether hindrances in environmental processes required extra time to complete the environmental document. We specifically cautioned participants not to include delays that occurred due to non-environmental process causes such as staff workload or funding problems.

[5] Generally an EIS is required for any project that has federal involvement and that is anticipated to have significant environmental impacts.

The universe of projects assumed to be of interest for this study comprises those with a recently completed EIS document. Examining characteristics associated with recently finished documents has several advantages:

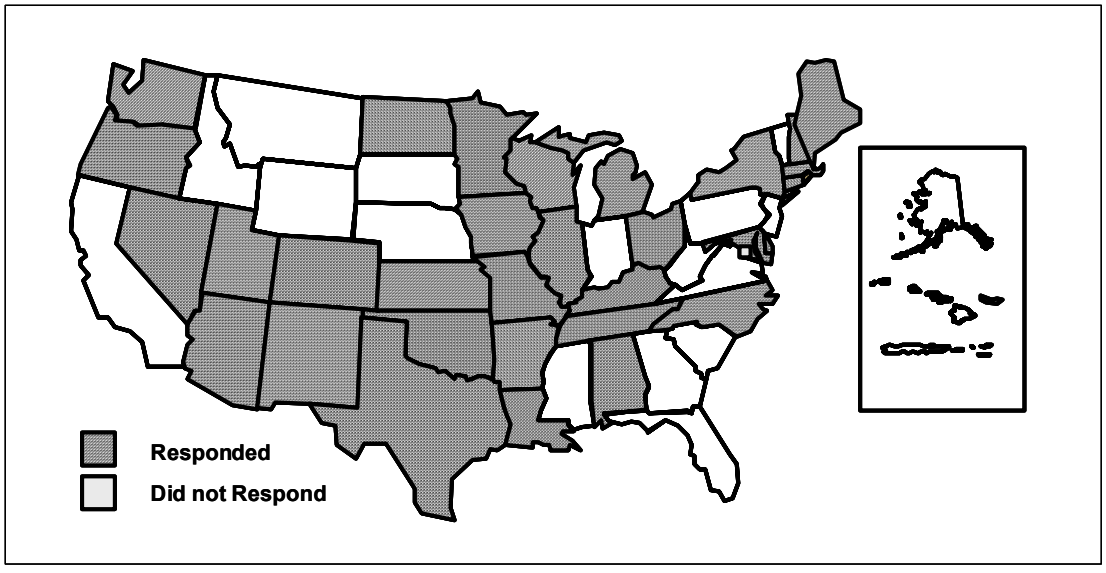
- ***Comparability –*** Projects in the study can be assumed to be subject to a broadly similar set of federal environmental requirements,
- ***Accuracy –*** Respondents are better able to recollect project history, giving results more accuracy, and
- ***Applicability –*** Trends observed in the survey are indicative of current approaches and are therefore relevant to policy makers.

Most DOTs complete five or less EIS documents per year; therefore they are likely to have several documents that could be considered "recently completed." For the purpose of this study, we focused on the MOST recent EIS document in each state. This establishes a universe of 52 projects (including DC and Puerto Rico). A more comprehensive study that considered additional projects was beyond the scope of the project.

A "Causes of Project Delay" survey instrument (included in Appendix A) was developed to gather comparable information from state DOTs about their most recently completed EIS document. Our goal was to collect information on a big enough set of projects to make observations that apply to the entire universe of projects of interest. Senior environmental personnel in 40 randomly selected state DOTs were contacted by telephone and asked to identify appropriate staff contact(s) knowledgeable about their agency's most recently completed EIS. Out of 40 states contacted, the 31 state DOTs shown in Figure one agreed to complete the survey. Surveys were conducted either by e-mail or in telephone interviews that took place between April and June of 2003.

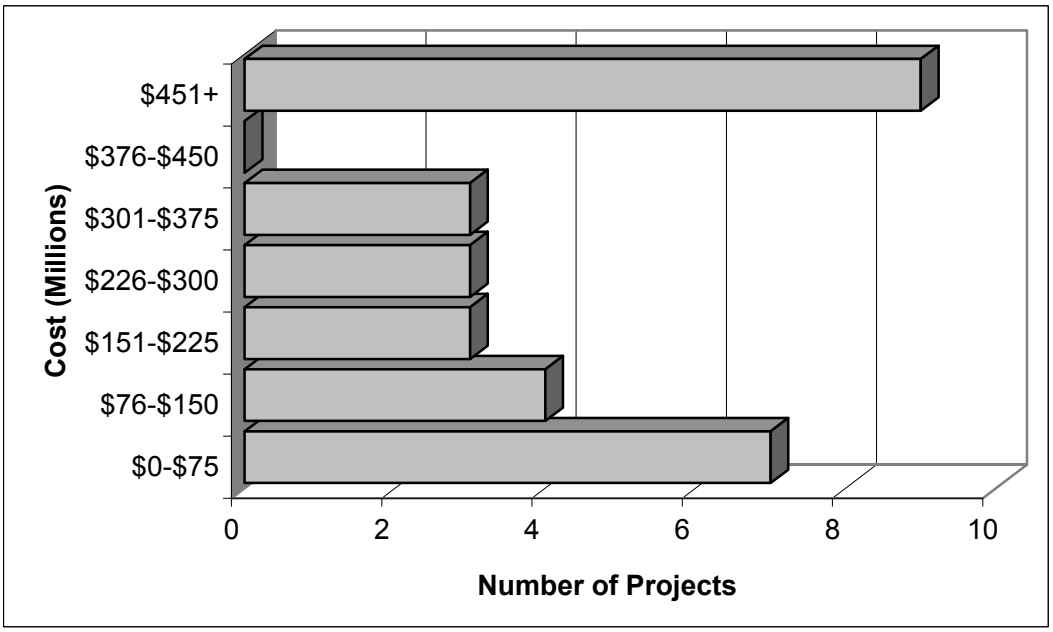
The data set of 31 projects is too small to support detailed statistical analysis. Basic patterns observed in the data set, however, provide a reasonable basis for inferring current characteristics of environmental process-related delays across the nation.

- **FIGURE ONE. STATES THAT RESPONDED TO "CAUSES OF PROJECT DELAY" SURVEY**



Survey returns show that the state DOTs interviewed generally began their most recent EIS in the mid- or late-1990s and finished it in 2002 or 2003. The median estimated cost for the projects studied is $250 million. The range of project costs, however, is broad with seven projects estimated to cost $100 million or less and four projects estimated to cost $1 billion or more. Figure two shows the range of estimated project costs. The projects surveyed typically involve capacity additions either on new alignments or as part of a major highway reconstruction or bridge replacement.

FIGURE TWO. PROJECT CONSTRUCTION COSTS



MEDIAN TIME TO COMPLETE ENVIRONMENTAL REVIEWS

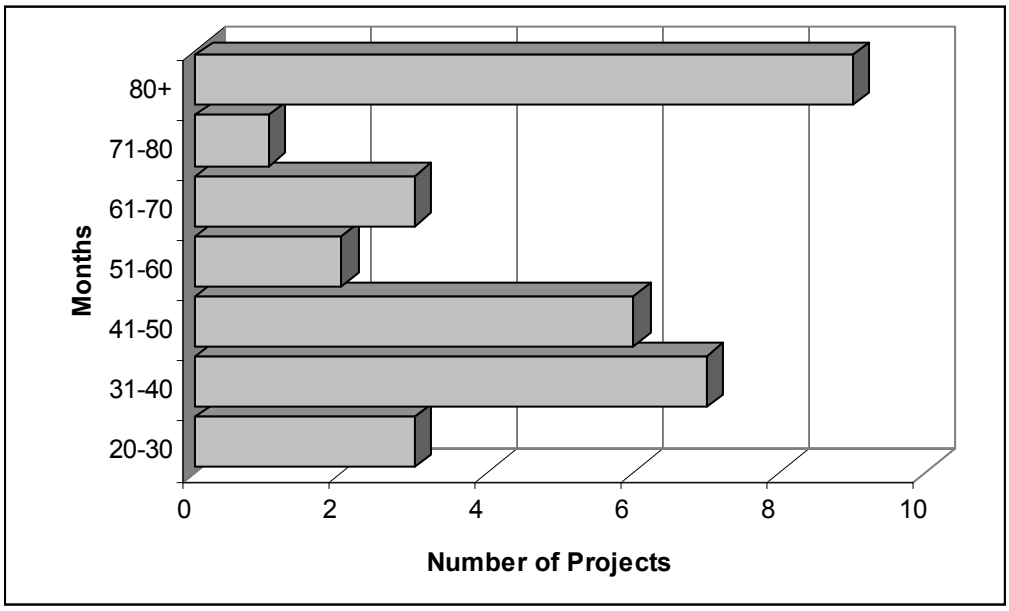
State DOTs have lead responsibility for preparing the EIS document, which has come to be a catch-all term to describe a process of project-level planning, environmental analysis, public involvement, and interagency discussions. The EIS process is strictly governed by NEPA; it has also become an umbrella process for demonstrating compliance with many other federal environmental laws such as Section 106 of the national Historic Preservation Act (NHPA), Section 7 of the Endangered Species Act (ESA), and Section 404 of the Clean Water Act (CWA). The NEPA and related laws require investigation of potential environmental impacts associated with possible project alternatives in an open process that involves other government agencies and the public.

The actual time required to complete an EIS document is easily measured. The EIS "clock" begins with publication of the project "Notice of Intent" (NOI) in the Federal Register and ends with publication of a Record of Decision (ROD).

For the state DOTs surveyed, the median time taken to complete their most recent EIS document and obtain a ROD was determined to be 44 months. The quickest EIS/ROD completion time reported in the survey was 27 months and the longest was almost twelve years (141 months). Just under one-third of the states surveyed took at least seven years (84 months) to prepare their last EIS and obtain a ROD, while 13 percent of states surveyed prepared their last EIS and obtained a ROD in 33 months or less. Figure three summarizes the time required to complete the EISs studied. As a comparison, FHWA reports a nationwide median EIS preparation timeframe for DOTs of 43 months.[6] The correlation between project cost and time to complete an EIS is weak; a regression analysis of survey data shows a correlation coefficient of 0.2. This suggests that project cost (a proxy for project size) is not a major determinant of time required to complete an EIS.

Obtaining a ROD in a timely fashion is important because initiation of subsequent phases in project development, for example final design, preparation of Plans Specifications and Estimates (PS&Es), and right of way acquisition, may not be initiated until the EIS is complete.[7] Delays during EIS preparation can therefore affect overall project delivery.

FIGURE THREE. EIS COMPLETION TIME



[6] FHWA, NEPA Baseline Study, 2000

[7] ROW acquisition generally may not begin on federally funded projects until completion of the NEPA process (23 CFR Sec 710.305). Under special circumstances, states may use state funding to acquire ROW if FHWA agrees that acquisition does not influence environmental assessment of the project. A state may use federal funds to acquire ROW prior to NEPA if it can demonstrate that protective action is required to prevent imminent development of the property that would limit future transportation choices or a substantial increase in costs.

SHARE OF PROJECTS DELAYED BY ENVIRONMENTAL FACTORS

The total time to complete an EIS is easily quantifiable since the start date of an EIS is published as an NOI in the Federal Register and the end date is recorded in the publication of the ROD following comments on the Final EIS. This information does not, however, give an indication of whether the EIS process was hindered, either by delays attributable to environmental factors or unrelated factors, such as contracting, staffing, project prioritization, or funding issues.

None of the state DOTs surveyed routinely tracks the occurrence of delays in the EIS process. 74 percent of those surveyed however set some form of deadlines for completion of their EIS documents; usually these are internal deadlines.[8] The survey instrument relied on knowledgeable DOT personnel to estimate the occurrence of environment-related delays, if any, based on these deadlines. Respondents were specifically asked to exclude delays unrelated to environmental factors.

The survey found that 35 percent of state DOTs contacted experienced no NEPA-related or other environment-related delays during completion of their most recent EIS. The remaining 65 percent of DOTs contacted indicated that some delay occurred that was attributable specifically to environmental process-related hindrances.

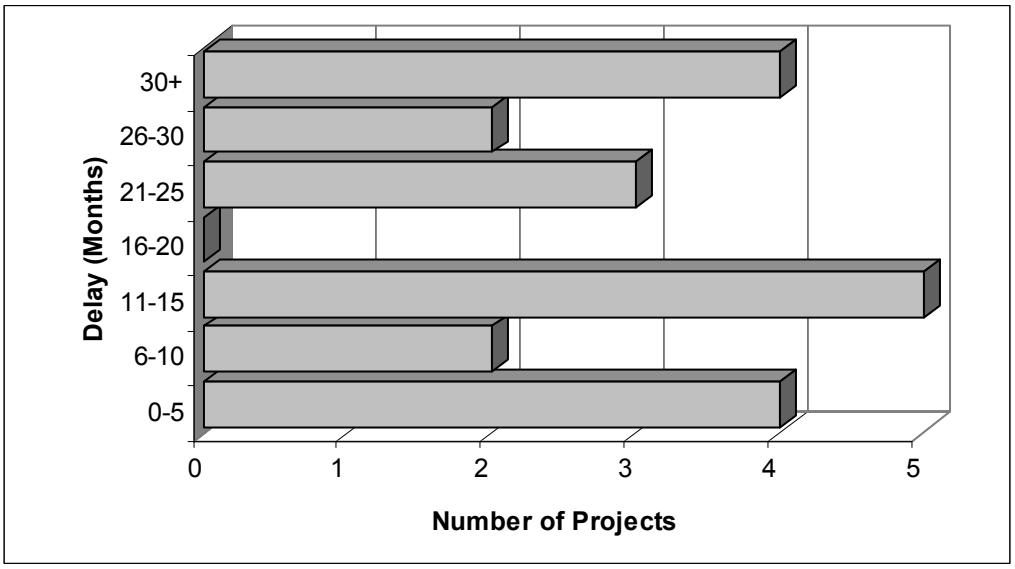
TIME ADDED TO PROJECT DEVELOPMENT BY ENVIRONMENTAL DELAYS

Having established that for states surveyed, environment-related delays were commonly encountered during preparation of their most recent EIS, the survey asked respondents to estimate the overall length of delay they experienced. Respondents used professional judgment in providing estimates, since most agencies do not maintain detailed records of the length of overall delay.

Results show that for the projects surveyed, the median amount of estimated delay, or time added to project development as a result of environmental factors is 12 months for the 65 percent of projects where an environment-related delay was reported. The five projects that were subject to greatest delay all experienced delays of more than two years.

[8] Many DOTs reported that they set internal, and or external deadlines for some or all components of their environmental reviews, however, there are no uniform procedures for establishing such deadlines and information provided during our interviews suggests that these deadlines are treated with varying degrees of importance by states. Because of variation in the quality of deadlines used by DOTs, we chose not to measure delay based on these deadlines.

FIGURE FOUR. MONTHS OF DELAY



CAUSES OF ENVIRONMENTAL DELAY

The EIS process is complex. It involves a blend of public input, inter-agency coordination, and technical analysis; multiple components of the EIS process often occur simultaneously. Environment-related delays subsequently are likely to be rooted in multiple causes. Every project is unique and no two delays are likely to occur for exactly the same reason, however, the survey sought to have respondents categorize environment-related delay in seven types:

- Selection of alternatives
- Technical study complexity
- Purpose and need
- Addition of late alternatives
- Concurrence points
- Conflicting study findings
- Late legal challenge

Even with only seven categories of environment-related delay, a sample size of 31 projects of which 20 were delayed can enable only limited conclusions to be drawn about the specific causes of environment-related delay. Table one reviews the survey findings on causes of delay.

According to the survey results, no single factor dominates delay for the projects examined. The three most frequently reported causes of delay for these projects are:

- Selection of alternatives - 39%,
- Technical study (Section 7, Section 106, Section 4f, etc.) complexity – 35%, and
- Agreement on purpose and need – 29%.

Respondents to the survey frequently report that multiple contributing factors are each partly responsible for delay. In fact, for more than 50 percent of the projects where any delay occurred, two or more causes of delay were reported. This suggests that solutions for reducing delay must be multi-faceted.

Table One. Causes of Delay In Order of Frequency

Cause of Delay	Share of Projects for which Delays were Attributed to this Cause	Median Amount of Delay Reported
Selection of Alternatives		
Early during an EIS, stakeholders must agree on a set of alternatives for detailed study that meet the purpose and need for the project. In addition to a "no build" alternative, an array of possible project variations capable of meeting the established purpose and need are usually considered. Reaching agreement on selection of alternatives is important and sometimes differences of opinion can cause delay.	39%	4 months
Example: Utah Legacy Parkway – Up to 9 alternatives were developed for consideration along stretches of the 14-mile project corridor; just reaching agreement on the range of alternatives for study added an estimated 12 months to the study.		
Technical Study Complexity		
The NEPA process does not occur in a vacuum. A project that requires NEPA review also typically requires review under other statutes as well, and those laws establish their own procedures. A few examples of these laws include Section 7 of the ESA, Section 106 of the NHPA, and Section 404 of the CWA. Some of the greatest challenges facing lead agencies in the NEPA process include completion of technical studies and the integration of NEPA procedures with the procedural requirements of each of these other statutes. The procedures required under any individual law may seem relatively straightforward. The integration of all of these laws into a single process can be enormously complex.	35%	10.5 months
Example: Alabama, Memphis-Huntsville-Atlanta Highway – Technical studies required under Section 4f and Section 106 for this proposed cross-state 4-lane highway led to conflict between landowners, local government agencies, and the Alabama Historical Commission over consideration of alternatives. Continual shifting of opinions about the feasibility of alternatives added 10 months to the EIS.		

Table One (Continued). Causes of Delay In Order of Frequency

Cause of Delay	Share of Projects for which Delays were Attributed to this Cause	Median Amount of Delay Reported
Purpose and Need		
The "purpose and need" statement is the starting point for the EIS process. It sets parameters for selecting appropriate alternatives for further study. Agencies have broad discretion to define a project's objectives in a purpose-and-need statement. In many states, the lead agency invites other agencies to participate in developing or commenting on the purpose and need statement. While this approach helps ensure major disagreements are identified and resolved early in the process, it can give each participant a "veto" over the EIS that causes delay.	26%	2 months
Example: Kentucky - Ohio River Bridges Project. FHWA took 12 months to agree to the state DOT's proposed purpose and need statement that included construction of two new Ohio River bridges linking Louisville and Southern Indiana. FHWA considered breaking the project into two EISs.		
Addition of Late Alternatives		
New alternatives may be proposed late in the EIS process. While the nature of the NEPA process requires openness to new alternatives, the decision to consider new alternatives late in the process can cause complications. In addition to revising the NEPA document itself, the lead agencies often must conduct further consultation under other laws (Section 106, Section 7, etc.) and revise the documentation required for those consultation procedures. Despite these problems, lead agencies often end up devoting substantial time and attention to late-identified alternatives, out of concern about potential litigation and permitting.	19%	8 months
Example: Iowa – Viaduct over multiple railroad tracks. Findings from the Section 4f study required the DOT to reconsider alternatives that had been eliminated for other reasons early in the EIS process. This caused 6 months of delay.		

Table One (Continued). Causes of Delay In Order of Frequency

Cause of Delay	Share of Projects for which Delays were Attributed to this Cause	Median Amount of Delay Reported
Concurrence Points		
Some states rely on "concurrence points" at key milestones in the EIS process to ensure that agreement between agencies is maintained. Common milestones include purpose and need, selection of alternatives, and preparation of a draft EIS. Concurrence must be obtained at these points to enable the project to continue. While this can be a valuable technique for ensuring consensus it can also slow down projects.	16%	3 months
Example: Illinois – 4-lane upgrade along 56 miles of US 67. USEPA initially refused to grant concurrence on purpose and need for the project, citing a preference for a "super two" highway design. This added 2 months to the EIS process.		
Late Legal Challenge		
Under current law, there is no statutorily defined time period that specifically applies to a lawsuit challenging a decision by the FHWA or FTA. The *potential* for litigation continues to exist long after the NEPA process ends – in some cases months or even years afterwards. As a result, it is difficult if not impossible for the USDOT agency and the project applicant to achieve true closure on the environmental process within a reasonable time after the process ends.	10%	5 months
Example: Utah Legacy Parkway – An FEIS for the project was issued on July 31, 2000. A ROD approving the project was issued on October 30, 2000. A coalition group brought a lawsuit against the project on January 31, 2002 – three months after the ROD was signed.		

Table One (Continued). Causes of Delay In Order of Frequency

Cause of Delay	Share of Projects for which Delays were Attributed to this Cause	Median Amount of Delay Reported
Conflicting Study Results		
An EIS usually requires multiple technical studies and sometimes the findings of these studies can be in conflict.	3%	4 months
Example: New Hampshire, 8 months		

OTHER CAUSES OF DELAY

In addition to delays in the environmental phase of project development, other elements of project development are also potentially subject to delay. The pre-NEPA planning phase varies from state to state and project to project; for large projects it often includes complex macro-level or corridor-type studies to help assess project needs. Detailed project design work must be completed. Utilities must be relocated and right-of-way acquired once the environmental phase is complete and sufficient design information is available to determine the project footprint. Project construction is the final major step. The survey asked respondents about occurrence of delay in these other areas of the project development process.

The methodology for our study restricted the amount of information we were able to collect about non-environmental causes of delay. Environmental review occurs early during project development; only pre-NEPA planning activities occur before environmental review. Some of the projects reviewed for this study have not advanced beyond the environmental phase and others are in design but have not completed construction. Results should be used with caution.

Share of Projects Delayed. For projects surveyed that had advanced to all or some subsequent project phases, 27 percent were reported to be delayed during pre-NEPA planning, 37 percent were reported to be delayed during final design, 28 percent were reported to be delayed in utilities/ROW, and 19 percent in construction.[9] In comparison, 65 percent of projects were reported to be delayed in the environmental phase. The results suggest that no other phase of project development may contribute as significantly as the environmental phase to delays; however further research would be beneficial in this area.

Causes of Delay. Respondents who indicated their project was delayed outside the environmental phase were asked to choose from a list of potential causes of delay. Results were as follows:

- Contracting: 3
- Change in project priority: 0
- Funding: 4
- Stakeholders: 4
- Staff workload: 1
- Other: 7

[9] The relative significance of pre-NEPA planning as a cause of delay compared to subsequent phases of project development may be over-estimated since many of the projects reviewed had not completed phases of project development beyond the EIS.

CONCLUSIONS

The results of our survey provide detailed information about the most recently completed EIS project in 31 out of 52 AASHTO member states (including District of Columbia and Puerto Rico). This information provides an objective basis for making inferences about the current characteristics of environmental delay in state DOTs.

The findings from the study indicate that for the 29 EIS projects where data on cost was collected, the median project cost is $250 million. Completion of NEPA and related activities for the 31 projects on which data was available took a median of 44 months to complete, and delays due to environment-related requirements were reported in more than 65% of projects reviewed. For the study sample, environmental delays add about one year to the time required to complete environmental reviews, suggesting that a goal of about 30 months for EIS completion is realistic. In our sample delays, are less prevalent in other phases of project development, such as design, right-of-way acquisition, and construction. The main causes of environmental delay reported for projects in our survey occur during selection of alternatives, completion of technical studies for Section 106, Section 4f, and Section 7, etc.; but most projects have multiple causes of environmental delay.

CASE STUDIES

The following five case studies provide an illustration of the environment-related problems that are encountered by DOTs during project development. The first four case studies demonstrate different types of problems encountered in Kansas, New Hampshire, Tennessee, and Texas. As noted earlier in the report, 35 percent of the projects examined experienced no environmental delay. The fifth case study demonstrates a project in Wisconsin where no delays were incurred.

CASE STUDY: US HIGHWAY 59 EXPANSION; LAWRENCE, KANSAS

Description: This project involves proposed widening of an approximately 18-mile stretch of US-59 between Lawrence, Kansas and Ottawa, Kansas from a two-lane facility to a four-lane facility on new right-of-way. The additional capacity will relieve existing and projected traffic volume and address safety problems on the existing highway, which are the result of regional growth in population and development. The selected alternative was chosen to minimize impacts to agricultural land, environmental resources, and to maintain the rural character of the corridor while meeting the project's purpose and need.

Land use between Ottawa and Lawrence is predominantly agricultural interspersed with low-density, auto-dependent residential and business use. A coalition of local landowners opposes the widening project because it will result in displacement of homes and loss of farmland; they favor a modernized two-lane project on existing right-of-way. Initially KDOT prepared an EA for the project, which was begun in 1997 and finalized in November 1999. Public controversy over the EA led to a decision by FHWA and KDOT to conduct a full EIS, which included detailed study of four alternatives, including a no-build option, a modern two-lane option, and two possible 4-lane freeway options on new alignments.

Estimated Project Cost: $214 million

EIS Start and End Dates: NOI – 4/2000, ROD – 5/2003 (37 months)

Estimated Delay: 24 months

Causes of Delay: A two year US-59 EA provided extensive scoping material for the subsequent EIS document; KDOT anticipated that a more detailed EIS could therefore be completed in a year or less. The EIS actually took more than three years to prepare. Much of this time was spent conducting complex technical studies to investigate environmental impacts of alternatives proposed by stakeholders in the process. Any realignment or widening of US-59 will result in relocations and loss of agricultural land and many landowners in the US-59 corridor have resisted the proposed widening project. Several studies were required to address concerns raised by landowners potentially affected by the project. These included studies of potential habitat for threatened species within project area including Mead's milkweed (federally listed) and the Red Bellied Snake (State listed), neither of which were found to be present in the selected alternative. A review of possible cultural resources including a possible Native American burial mound and a civil-war era historic home found no cultural resources of significance.

CASE STUDY: MERRIMACK RIVER CROSSING/ AIRPORT ACCESS ROAD, MANCHESTER; NEW HAMPSHIRE

Description: The Manchester Airport is a major engine of economic growth in southern New Hampshire. This project involves construction of a 1.2 mile, 4-lane limited access highway/bridge on new alignment that connects the F.E. Everett Turnpike/US Route 3 to the west of the Merrimack River with NH Route 3A on the eastern side of the river. The principal purpose of the project is to improve access to Manchester Airport and a surrounding industrial area.

The proposed project will cause loss of wetlands and interfere with Bald Eagle habitat, and agricultural land. A mitigation plan was devised to provide mitigation for the wetland impacts and the eagle habitat and the proposed route was relocated to avoid a tree farm. Proposed mitigation efforts include permanent conservation easements on either side of the river to secure the eagle habitat.

Estimated Project Cost: $115 million

EIS Start and End Dates: NOI – 2/1992, ROD – 4/2003 (134 months)

Estimated Delay: 36 months

Causes of Delay: NHDOT shared proposed deadlines for major milestones in the project with partner agencies; these included deadlines for scoping, purpose and need, alternatives selection, DEIS, COE 404 hearing, Section 7 assessment, and the ROD.

Delays were caused by several issues. Initially NHDOT was unable to reach concurrence with USEPA and FWS on a reasonable mitigation plan for loss of wetlands and impacts to Bald Eagle habitat. Subsequently NHDOT's traffic modeling procedures used to determine the preferred alternative were criticized by the CLF. In particular, because an upgraded alternative was ruled out by modeling. Finally delay also occurred because eagles began nesting next to the selected alternative around the same time as the publication of an FEIS. This led to a formal Section 7 review.

CASE STUDY: INTERSTATE 40 WIDENING; KNOXVILLE, TENNESSEE

Description: This project involves reconstruction of a 4-mile stretch of urban Interstate 40 north of downtown Knoxville to add lanes and upgrade interchanges. This segment of I-40 experiences a.m. traffic congestion since it is the only portion with 4 traffic lanes while connecting segments have 6 traffic lanes, and it features a deficient interchange design with unsafe on- and off-ramps. Several historic residential districts surrounding I-40 and limited right-of-way in this built up urban area make reconstruction challenging.

Estimated Project Cost: $131 million

EIS Start and End Dates: NOI – 4/7/1995, ROD – 7/23/2002 (87 months)

Estimated Delay: 24 to 30 months

Why Delay Occurred: This project is located in close proximity to a historic close-in suburb of Knoxville; originally developed in the late 19th century and featuring a mix of architecturally distinctive single family homes, duplexes, and apartments. The most significant issue addressed by the EIS was visual and noise impacts to residential neighborhoods adjacent to the project. TDOT held numerous public meetings with stakeholders during preparation of the draft EIS and developed a project plan that included noise barriers to address visual and noise impacts and avoided historically significant properties. A draft EIS was completed in 2000.

Following completion of the DEIS, stakeholders requested that TDOT consider a completely new alternative, which involved depressing I-40 below ground-level to reduce noise and visibility impacts and reconnect the two sides of the neighborhood that are now bisected by I-40. (Currently, and in TDOT's plan, I-40 is elevated 30 feet above the neighborhood.) Study of this alternative added 24 to 30 months to the EIS timeframe. The new alternative, however, was found to add $25 million to the original cost of the project and to be technically unfeasible because of the impossibility of providing adequate drainage solutions for the depressed roadway.

CASE STUDY: KATY FREEWAY (INTERSTATE-10), HOUSTON; TEXAS

Description: The Katy Freeway (Interstate 10) extends 40 miles from the Central Business District of Houston west to the Brazos River. Constructed from 1960 to 1968, it was designed to carry 79,200 vehicles per day and to have a pavement life of 20 years before major reconstruction would be required. Today the Katy Freeway carries over 207,000 vehicles per day and experiences congestion for 11 hours each day, not just at conventional peak hours. Maintenance costs for the deteriorating roadway are reaching $7.9 million per year. The traffic volumes and pavement deterioration are not only a deterrent to conducting business in the immediate Houston area, but also across the region, state and nation.

The Texas Department of Transportation, after more than 15 years of discussion, planning, and public meetings with businesses, community members and elected officials, (including a Major Investment Study in 1995) has developed a plan to reconstruct and widen the Katy Freeway from 11 lanes to 14 to 18 lanes. A groundbreaking ceremony for construction of the first portion of the project took place in June 2003.

Estimated Project Cost: $1.2 billion

EIS Start and End Dates: NOI – 4/1998, ROD – 8/2002 (52 months)

Estimated Delay: 12 months (and counting)

Causes of Delay: The Katy Corridor Coalition (KCC), a local, citizen led organization has filed a lawsuit against TxDOT/FHWA in September 2002 challenging the findings of the final EIS document and seeking a permanent injunction to stop the project until an expanded array of alternatives can be fully evaluated. The KCC's lawsuit addresses air pollution, noise, and drainage impacts of the preferred design selected by TxDOT/FHWA. The KCC's lawsuit also supports analysis of a new project alternative that involves depressing portions of the widened roadway below ground-level. The lawsuit prompted an FEIS Reevaluation Report published by FHWA in June 2003 that is intended to address the issues raised in the initial lawsuit. As a consequence, the KCC has issued a revised lawsuit that responds to supposed inadequacies in the FEIS Reevaluation Report. At present, TxDOT is proceeding with construction plans while the law suit is resolved.

CASE STUDY: US HIGHWAY 14/61, BYPASS, WISCONSIN

Description: Highway 14/61 is a major regional highway serving communities in southwestern Wisconsin. The highway passes through the cities of Viroqua and Westby. High traffic volumes and heavy truck traffic, a mix of local and through traffic, insufficient roadway capacity, and numerous local road intersections and driveways, affect travel efficiency and safety.

This project involves building a 17-mile by-pass on new alignment around the communities of Westby and Viroqua in southwestern Wisconsin. At present USH 14/161 passes through the downtowns of these communities causing congestion problems.

Primary impacts identified during the EIS include severance and loss of farmland. The NEPA document was preceded by a feasibility study. This helped prepare the way for the EIS and consideration of alternatives. F particular importance was early recognition about the importance of maintaining the character of "main street." In addition, 30% design was completed to provide good information for the EIS.

Estimated Project Cost: $40 million

EIS Start and End Dates: NOI – 6/1999, ROD – 3/2002 (33 months)

Estimated Delay: None. WisDOT relied on an experienced consultant team to complete the Highway 14 EIS. A feasibility study for the project corridor was conducted before the formal EIS process was begun. According to the consultant for that study, who also worked on the subsequent EIS, this study helped in preparing the community for a full EIS. In particular, it enabled:

1) the community to become involved in an educated fashion early on in the process on issues such as preserving the character of their "main street," and minimizing agricultural land impacts that are often a major issue for projects in rural areas, and
2) The DOT to develop better alternatives for consideration during the actual EIS.

The project team established milestones for key steps in the EIS process and communicated them with stakeholders like FHWA and the public. (Wisconsin has a NEPA/404 merger agreement in place, but the team did not need to use it since the project was considered quite straight forward.) Functional design work was prepared to assist the team in analyzing alternatives, including "30% complete' design for the recommended alternative.

APPENDIX A: SURVEY INSTRUMENT

Causes and Extent of Delay in the NEPA Process
A Survey of State DOTs

PROJECT PURPOSE

The objective of this research is to examine recent transportation projects requiring an EIS to determine a) whether there was any delay; b) what the primary reasons for that delay were; and c) if there was delay associated with the NEPA process, what were the specific areas where the delay occurred and why it occurred. The purpose of this study is not to examine in detail all aspects of project delay (of which there are many[10]) but rather to explore in depth what some of the principal causes of delay in the NEPA process are.

1.0 Survey Instructions

As discussed in our initial contact, we will contact you by phone shortly to conduct a survey of your state's experience regarding the causes and extent of delays to project development that occur during the NEPA process. Please review the following questions in advance of the call.

For your agency, identify the most recent transportation project that meets the following criteria:

- Preparation of NEPA Environmental Impact Statement (EIS) took place, and
- A Record of Decision (ROD) has been published in the Federal Register.

The following questions should be completed for the project.

2.0 Overview of Project

2.1 Provide a brief description of the project that includes information about the approximate project cost, the type of project (new capacity, bridge, widening, etc); its location; and any unique characteristics regarding the project's history.

2.2. When was the Notice of Intent (NOI) to proceed with an EIS published in the Federal Register? (Year and month)

2.3 When was the ROD signed? (Year and month)

2.4 Were any internal deadlines established for completion of the EIS; and, or for interim EIS-related milestones such as scoping or a draft EIS, if so what were they? (Years and months)

2.5 Were these internal deadlines shared with resource agencies and was there concurrence?

[10] In Congressional testimony dated September 19, 2002, GAO noted FHWA's data that of the total 9 to 19 years needed to complete a major new federally financed highway project, 1 to 5 years are consumed by the preliminary design and environmental review work. See: http://www.senate.gov/~epw/107th/Siggerud_091902.pdf.

3.0 Delays in Project Development

(In this section, a “significant delay” means that progress towards completion of a phase of the project was hindered for at least a month by one or more factors.)

3.1 Other than delays that occurred during NEPA compliance, did significant delays occur in any other project development phases?

- Pre-NEPA Planning Y/N
- Final design Y/N
- Right of way/utilities Y/N
- Construction letting Y/N
- Other (Explain)

3.2 For each phase in which you indicated delay occurred, which of the following categories do you think contributed to this delay?

- Contracting issues
- Funding issues
- Stakeholder concerns
- Unanticipated technical issues
- Staff workload/availability
- Change in priority ranking of project (Cause other than funding/staff availability)
- Other (please explain)

3.3 For elements you’ve identified, give a score of between 1 and 10 (1: not significant and 10: very significant) to indicate its significance in hindering progress.

3.4 For each cause of delay identified, please describe the factors contributing to the delay.

4.0 Delay in the NEPA Process

4.1 Did any of the following elements of the environmental review process hinder progress towards a final ROD, and/or subsequent project development? (Yes/no on each one)

- Preparation of a "purpose and need" statement (y/n)
- Selection of alternatives to be studied (y/n)
- Agreement among public agencies on defined EIS "concurrence points" (y/n)
- Unusual complexity in any technical studies required under NEPA-related Federal laws, such as Section 4f, Section 106 and Section 7 (y/n)
- Conflicting results from multiple technical studies (E.g. Section 106 and Section 404) (y/n)[11]
- Addition of an alternative(s) to be studied late in the EIS process (y/n)
- A legal challenge after the ROD (y/n)
- Other (please explain)

IMPORTANT NOTE. DO NOT CHECK AN ELEMENT ABOVE IF PROGRESS IN THIS AREA WAS HINDERED PRIMARILY AS A RESULT OF ONE OF THE FOLLOWING:

- Consultant contracting issues
- Funding shortages
- Staff workload/availability
- Change in priority ranking of project (Cause other than funding/staff availability)

4.2 Estimate approximately how much additional time, if any, was required to reach a ROD as a result of any environmental process-related hindrances. (Months)

4.3 For elements of the environmental process you identified in question 4.1 as hindering progress to the ROD, give each element a score of between 1 and 10 (1: not significant and 10: very significant) to indicate its significance in hindering progress.

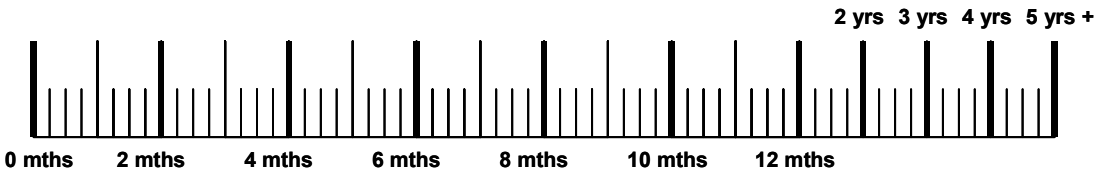
- Development of "purpose and need" statement
- Selection of alternatives to be studied
- Agreement among public agencies on defined EIS "concurrence points"
- Unusual complexity in any technical studies required under NEPA-related Federal laws, such as Section 4f, Section 106 and Section 7
- Conflicting results from multiple technical studies (E.g. Section 106 and Section 404)
- Addition of an alternative(s) to be studied late in the EIS process
- A legal challenge after the ROD
- Other

[11] E.g. under Section 4(f), the prudent and feasible alternative that avoids, or causes the least harm to, certain protected resources (parks, recreation areas, refuges, historic sites) must be selected, or under Section 404 the practicable alternative that is "least damaging" to the aquatic environment must be selected. Yet, these alternatives may not be most environmentally beneficial from a larger perspective.

5.0 Individual Components of Environmental-related Delay

5.1 Purpose and Need Statement

5.1.1 If progress towards the final ROD was hindered during development of the purpose and need statement, how much additional time was required to develop a satisfactory statement?



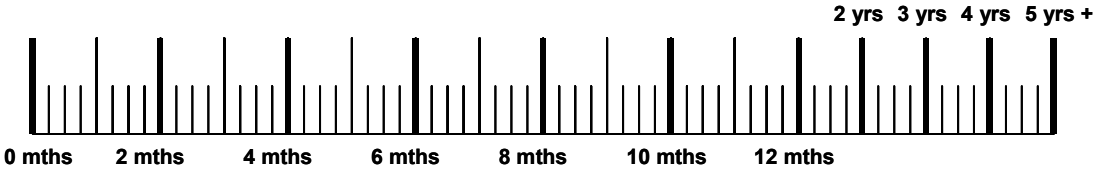
5.1.2 Explain why additional time was required.

5.1.3 (If you have worked on these issues for at least five years.) For all EIS projects in your agency, describe how you think the frequency of delays due to this cause has changed in the last five to ten years? (Circle one)

- Increased a lot
- Increased somewhat
- Stayed the same
- Decreased somewhat
- Decreased a lot

5.2 Selection of Alternatives

5.2.1 If progress towards the final ROD was hindered during selection of a set of alternatives to be studied, how much additional time was required to develop a satisfactory set of alternatives?



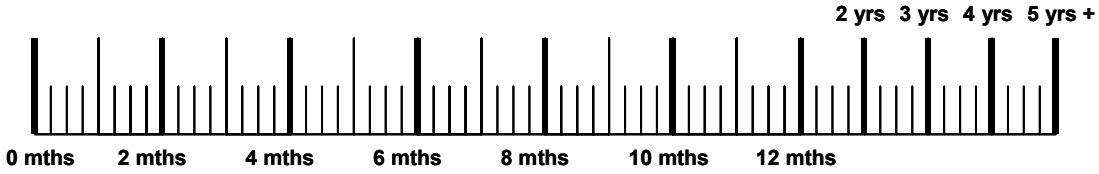
5.2.2 Explain why additional time was required.

5.2.3 (If you have worked on these issues for at least five years.) For all EIS projects in your agency, describe how you think the frequency of delays due to this cause has changed in the last five to ten years? (Circle one)

- Increased a lot
- Increased somewhat
- Stayed the same
- Decreased somewhat
- Decreased a lot

5.3 Concurrence Points

5.3.1 If your state has established "concurrence points" for the NEPA process (e.g. in a NEPA/404 merger agreement), was progress towards the final ROD hindered due to problems in achieving "concurrence" between agencies and if so, how much additional



time was required to achieve additional concurrence?

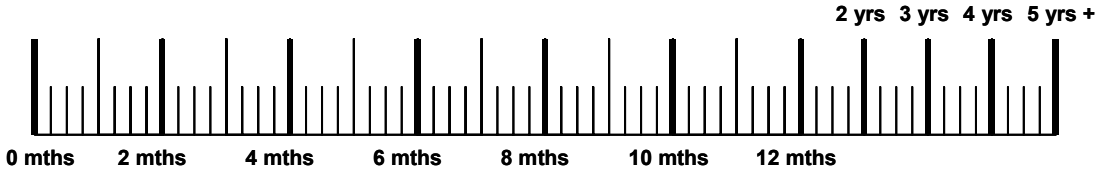
5.3.2 Explain why additional time was required.

5.3.3 (If you have worked on these issues for at least five years.) For all EIS projects in your agency, describe how you think the frequency of delays due to this cause has changed in the last five to ten years? (Circle one)

- Increased a lot
- Increased somewhat
- Stayed the same
- Decreased somewhat
- Decreased a lot

5.4 Late Alternatives

5.4.1 If progress towards the final ROD was hindered by the addition of new alternatives late in the EIS, how much additional time was required to address the new alternative(s)?



5.4.2 Explain why additional time was required.

5.4.3 (If you have worked on these issues for at least five years.) For all EIS projects in your agency, describe how you think the frequency of delays due to this cause has changed in the last five to ten years? (Circle one)

- Increased a lot
- Increased somewhat
- Stayed the same
- Decreased somewhat
- Decreased a lot

5.5 Technical Studies

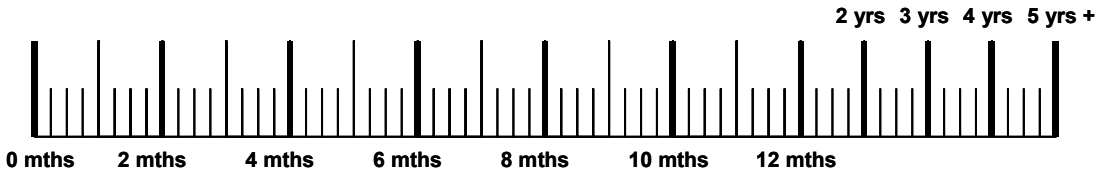
5.5.1 For each of the following subject areas, did completion of any technical studies, analyses, or permits hinder progress towards a final ROD that has not been accounted for in the survey already. (Check all that apply.)

- ○ Travel forecasts
- ○ Induced travel
- ○ Environmental justice
- ○ Cumulative impacts
- ○ Noise
- ○ Energy
- ○ Air quality
- ○ Wetland and stream impacts
- ○ Section 4f
- ○ Threatened and endangered species
- ○ Historic and cultural resources
- ○ Other

5.5.2 For each of the technical areas identified above, briefly explain why progress was hindered.

5.6 Conflicting Environmental Study Findings

5.6.1 If compliance with individual, separate environmental requirements resulted in conflicting findings that hindered progress towards the final ROD, how much additional time did this situation require to achieve resolution?[12]



5.6.2 Explain why additional time was required.

5.6.3 (If you have worked on these issues for at least five years.) For all EIS projects in your agency, describe how you think the frequency of delays due to this cause has changed in the last five to ten years? (Circle one)

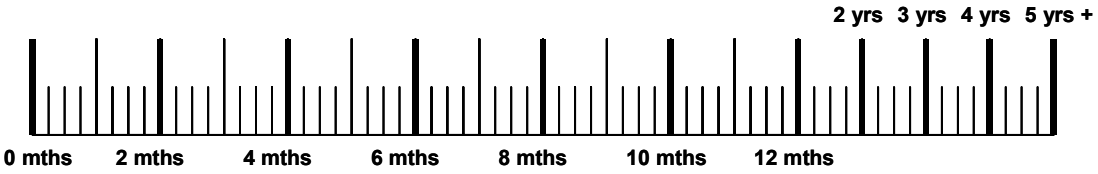
- Increased a lot
- Increased somewhat
- Stayed the same
- Decreased somewhat
- Decreased a lot

5.7 Late Legal Challenge

5.7.1 Was the EIS challenged in court more than six months after its completion? (y/n)

[12] E.g. under Section 4(f), the prudent and feasible alternative that avoids, or causes the least harm to, certain protected resources (parks, recreation areas, refuges, historic sites) must be selected, or under Section 404 the practicable alternative that is "least damaging" to the aquatic environment must be selected. Yet, these alternatives may not be most environmentally beneficial from a larger perspective.

5.7.2 Did the legal challenge hinder project development, and if so how much additional time was required to resolve this challenge?



5.7.3 Explain why additional time was required.

5.7.4 (If you have worked on these issues for at least five years.) For all EIS projects in your agency, describe how you think the frequency of delays due to this cause has changed in the last five to ten years? (Circle one)

- Increased a lot
- Increased somewhat
- Stayed the same
- Decreased somewhat
- Decreased a lot