Expedited Alternatives Analysis for the Dallas Area Rapid Transit Project

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Dallas Area Rapid Transit (DART) recently completed an alternatives analysis/draft environmental impact statement (AA/DEIS) and subsequent final environmental impact statement (FEIS) in a little over 2 years. The process was completed under an expedited arrangement with the Federal Transit Administration (FTA). DART's experience and the activities involved in this process are discussed. Lessons are identified that others may be able to use to significantly reduce the time to complete what is often a multiyear effort. The system planning effort that preceded the AA/DEIS is described, since it laid the groundwork for the successful completion of the AA/DEIS in a relatively short time. Among the system planning activities that contributed to a smoother AA/DEIS were the development of the travel forecasting model set, the analysis of corridor-specific alternatives, and the establishment of the federal process as an aid to decision making. The new system plan included a 33-km (20-mi) light rail system. DART was motivated to complete the AA/DEIS/FEIS quickly to begin implementation of the proposed rail system. An expedited arrangement was agreed to by FTA in response to the secretary of transportation's Overmatch Initiatives Program. The expedited treatment limited the reports that needed FTA approval and provided DART with priority in the review process. Additional actions were taken to limit the duration of the AA/DEIS process.

The Federal Transit Administration (FTA), formerly the Urban Mass Transportation Administration (UMTA), has developed a planning process to be followed by applicants for federal funding assistance in the development of major capital investment projects such as rail systems. The cornerstone of the FTA project development (*1*) process is the alternatives analysis/draft environmental impact statement (AA/DEIS). The alternatives analysis examines various alternative solutions to corridor transportation problems. The draft environmental impact statement identifies the environmental impacts associated with each alternative. The AA/DEIS process combines sound planning practices and compliance with federal environmental laws, the most significant of which is the National Environmental Policy Act of 1969 (NEPA).

A substantial amount of time is required to conduct an AA/DEIS. The U.S. General Accounting Office (GAO) has investigated numerous projects to understand the time necessary to conduct an AA/DEIS. Their findings indicate that 13 to 38 months is required to conduct an AA/DEIS. Another investigation by Diridon (*2*) identified a time frame of 32 to 40 months. In 1989 the secretary of transportation announced that an AA/DEIS could be conducted in an expedited manner for projects that provide substantially more than the required local matching funds. This overmatch initiative is intended to encourage more local funding of major capital investments in transit.

The overmatch initiative and the prospect of an expedited process were announced as Dallas Area Rapid Transit (DART) was about to begin the AA/DEIS process for the South Oak Cliff Corridor located in Dallas, Texas. In 1989 DART was highly motivated to begin implementation of the recently developed systems plan that called for, among other elements, a 20-mi light rail system. Therefore, before initiating efforts toward the South Oak Cliff AA/DEIS, DART requested and received an expedited AA/DEIS process agreement with FTA, which permitted an accelerated schedule. With the help of the expedited process, DART was able to complete the AA/DEIS and the subsequent preliminary engineering/final environmental impact statement (PE/FEIS) process in a little more than 2 years.

Studies conducted by GAO and by Diridon indicate that the typical time necessary to perform this work is 32 to 72 months.

This paper is intended to discuss our experiences with an expedited schedule. Numerous lessons were learned from this effort, many of which may be of value to others entering the AA/DEIS process. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) identified possible efficiencies that could be incorporated into the AA/DEIS process. The experiences discussed in this paper are from a process antedating ISTEA but are still applicable under the proposed ISTEA improvement.

BACKGROUND

DART was created on August 13, 1983, when voters in 14 cities and Dallas County cast ballots in favor of regional public transportation. In January 1984 the voter-approved 1 percent sales tax went into effect, and DART began formal operations. In 1984, the DART board chose light rail transit as the preferred mode for its principal fixed-guideway technology. Following several system plan and financial plan revisions, DART scheduled a bond election in June 1988, in which voters were asked to support long-term indebtedness to construct a 155-km (93-mi) light rail system. This bond election failed, sending DART staff back to the drawing board.

Several factors led to the defeat of the bond proposal, especially the public's dissatisfaction with (*a*) the cost of the proposed rail system, (*b*) the reluctance to incur long-term debt to pay for it, and (*c*) the lack of public involvement in the transit authority's planning efforts. Shortly after the bond defeat, DART began to develop a revised system plan.

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It is important to review the preparation of the new system plan, since success of the AA/DEIS can be traced to the system planning efforts that laid the groundwork. The new system plan's development was based on a set of guiding principles established early in the process. Included in these principles was the request to examine all alternatives in each corridor and base the recommendations on cost-effectiveness and public acceptance. This resulted in a consensus on the system plan and elements in the plan.

DART began the system planning process by identifying several candidate projects for each travel corridor, including express buses, high-occupancy vehicle (HOV) lanes, elevated rapid transit (heavy rail and monorail), and surface rapid transit (light rail). A technical analysis of each candidate project was prepared that included cost and ridership estimates and probable environmental impacts. Three alternative system plans were developed that were loosely based on the three basic types of fixed-guideway transit systems: HOV lanes, elevated rapid transit, and surface rapid transit. On the basis of anticipated costs and ridership and the goal of achieving a cost-effectiveness index (CEI) of $10 per added transit trip (based on the FTA CEI formula), a "budget" was identified for each corridor that would ensure that the three plans were all cost-effective and could be financed without long-term debt. A network of community transportation forums was established to solicit comments and receive input on the plans. From these comments a composite system plan was prepared that was approved by the board in June 1989. This revised "New Directions" system plan was adopted by the city of Dallas, Dallas County, and other member cities by October 1989. The revised system plan calls for 110 km (66 mi) of light rail transit, 62 km (37 mi) of HOV lanes, 30 km (18 mi) of commuter rail service, and continued expansion of bus and van services.

The system plan recommended early implementation of a 33-km (20-mi) light rail starter system, along with other commuter rail and HOV lane components. The proposed light rail starter system is made up of three lines: a 15-km (9-mi) line from the South Oak Cliff section of Dallas through the central business district (CBD); an 8-km (5-mi) branch off the South Oak Cliff line into West Oak Cliff; and a 12-km (6-mi) line along the North Central corridor between Park Lane and the CBD. During system planning efforts DART worked with FTA to identify a federal priority corridor. The system plan called for the South Oak Cliff line to be federally funded; the other two lines would be locally funded.

Three activities during the system planning process greatly contributed to completing the South Oak Cliff Corridor AA/DEIS in a relatively short time. Because the system planning process examined alternative technologies and alternative alignments in each corridor, the alternatives to be considered in the South Oak Cliff Corridor AA/DEIS could be screened. This proved to be a significant factor in saving time by limiting the work effort to be a reasonable number of alternatives.

Recently updated travel forecasting models were available to conduct ridership studies and cost-effectiveness analyses during the system plan development. This also was a key factor in keeping the AA/DEIS process moving. No model development was needed during the AA/DEIS, and travel forecasts could begin as soon as the alternatives were sufficiently defined.

FTA's cost-effectiveness formulas were instrumental in establishing a framework for policy makers and citizens to debate and compare alternatives. Using the formulas and ridership projections prepared by North Central Texas Council of Governments (NCTCOG), DART developed its plan to reflect a cost-effectiveness system. This was important during the AA/DEIS because it established cost-effectiveness as an important evaluation issue and helped define reasonable alternatives.

AA/DEIS PROCESS

As noted earlier, DART was highly motivated to complete the AA/DEIS process in a relatively short period of time. We requested and received approval from FTA to initiate the AA/DEIS in the South Oak Cliff Corridor under an expedited status in August 1989. The expedited agreement provided DART with relief on two issues. The first was that the series of standard analysis methods reports would need FTA approval, but the series of technical memoranda, which document the results of the analysis (commonly referred to as results reports), would not need to be approved. Otherwise, the process followed by DART did not deviate from the AA/DEIS standard practices established by FTA. The second time saver was a commitment by FTA to attempt to provide comments on reports within 2 weeks. Whereas the first issue saved time by eliminating the need to get approval on a number of reports, the agreement's real importance was in establishing DART's AA/DEIS documents as a priority over other projects under review by FTA.

Scoping meetings, the initial step in the AA/DEIS process, were held in September 1989. Following scoping, a screening of alternatives was done, which reduced the number of alternatives. Much of the analysis documented during the system plan preparation was useful in this screening activity. This proved to be a key step in reducing the time for the process, since we were able to drop a large set of alternatives through a documented screening process. The screening process also documented our consideration of a large set of alternatives, a stated goal of NEPA. By November 1989 we had developed the list of final alternatives to analyze throughout the AA/DEIS process.

The final set of alternatives included the no-build and TSM alternatives and several combinations of light rail alignments. The South Oak Cliff Corridor was divided into three distinct geographic areas: the CBD, the Trinity River crossing area, and the Lancaster Road area. Within each of these areas, a small number of alternative alignments and station options were considered.

While staff were documenting the results of scoping and the screening of alternatives process, our specialty subconsultants began preparation of the methods reports. Draft methods reports were submitted between December 1989 and April 1990. Approvals of the methods reports were received between February and May 1990. While the methods reports were being prepared and reviewed, staff initiated collection of data, analysis, and documentation efforts for what would become the results reports.

Rather than keeping methods and results report efforts separate from each other, DART initiated analysis before the

formal approval of the appropriate methods report. These early efforts were not initiated until an acceptable level of comfort was obtained from FTA staff. Obviously, some risk was associated with initiating these efforts before methodology approval, but the trade-off was an earlier start on the lengthy analysis required to prepare results reports. Since the results reports were oriented to transition into the appropriate DEIS chapter, this early start permitted staff to begin preparation of the DEIS.

During the process we coordinated closely with FTA staff. As work was proceeding on the results reports, questions were raised that led FTA staff to request additional analysis. It was decided early in the process to simply do the analysis rather than take the time to debate whether the analysis was necessary. This seemed to save time as well as provide FTA staff with the information they needed.

The preliminary draft of the DEIS was prepared and forwarded to FTA staff in June 1990. Summer 1990 was spent coordinating with FTA staff regarding the adequacy of the document. To ensure that this review and comment cycle proceeded quickly on this draft and on all previous reports, we attempted to edit the document so that FTA staff would only need to concentrate on the content. By August 1990 FTA staff were satisfied with the AA/DEIS and approved circulation for public comment.

The 45-day period in which public comment on the DEIS is sought began in September and ended in October 1990. As comments were received, either at the public hearings that were held during the comment period or when they were submitted in writing, staff began to document the comments and prepare a response. Also during the comment period we began the final product of the AA/DEIS process: the locally preferred alternative (LPA) report.

The DART board approved the LPA in November 1990. The LPA recommendation coincided with the majority of public comment and support, including the support of the state historic preservation officer and Dallas City Council. By the end of November, FTA had concurred with the LPA and authorized DART to initiate preliminary engineering and the preparation of the FEIS.

PE/FEIS PROCESS

The PE/FEIS process was less structured than the AA/DEIS process. This is reflected in written FTA guidance, which, contrary to the AA/DEIS guidance, provides little direction to applicants. The PE/FEIS process was driven by the need to do more detailed cost and impact analysis and to identify environmental impact mitigation measures for the LPA.

DART was fortunate to retain the AA/DEIS consultant team for the PE/FEIS efforts. This resulted in a significant time savings by beginning immediately where we had stopped with the AA/DEIS analysis and eliminating the inefficiencies of mobilization.

The most significant issue identified during the AA/DEIS was the impact on the West End Historic District, which includes Dealey Plaza, site of President Kennedy's assassination. When the FEIS was initiated, this issue was quickly addressed to allow adequate time to consider the sensitive nature of the potential impact on the area. The impact on this historic district required compliance with Section 106 of the Historic Preservation Act and Section 4(f) of the Department of Transportation Act. Compliance with Section 110 of the Historic Preservation Act was also required by efforts of others to create a national historic landmark to preserve the Kennedy assassination area. Documentation associated with these preservation efforts required coordination with numerous parties at all levels of government. It was the most time-consuming effort during the PE/FEIS process, beginning in January 1991 and concluding in July 1991. Had we waited to begin work on this issue, the completion of the FEIS would have been delayed.

Impact analyses by the specialty subconsultants for the other environmental issues were concurrent with the historic preservation work. Since the historic preservation work had the longest duration of the analyses, we were able to complete the other environmental work relatively early to make adjustments in the preliminary engineering efforts to accommodate mitigation requirements, as necessary.

The draft FEIS was sent to FTA in June 1991. Summer 1991 was spent coordinating with FTA staff and obtaining final approvals for the FEIS, including the Section 106/110 memorandum of agreement and the Section 4(f) statement. By August 1991 FTA staff were satisfied with the FEIS and approved its circulation for public comment.

The comment period ended in October 1991. As the comments were received, responses were prepared and sent to FTA. The record of decision, completing the FEIS process, was issued in October 1991.

REASONS FOR EXPEDIENCE

There are several reasons why DART was able to complete the combined AA/DEIS and PE/FEIS process in a little over 2 years: system planning, scoping/screening, expedited status, and management.

System Planning

During 1987 NCTCOG and DART worked with outside experts to update the travel forecasting models. This process resulted in extensive review and debate over the modeling process and its assumptions, including adequate documentation. Having a recently calibrated model that had gone through this process allowed DART to begin the forecasting work on alternatives early in the process. Because of this preparation, it was not necessary to develop models during the AA/DEIS process.

The unsuccessful bond election in 1988 was the impetus for a new system planning effort that placed emphasis on cost-effectiveness, public involvement, and examination of numerous alternatives in each corridor. The benefit of system planning to the AA/DEIS process was twofold. First, since the federal CEI was used in system planning to screen and compare alternatives, it established the federal CEI and, by association, the entire FTA project development process as a framework for decision making. Second, the documentation of numerous alternatives studied during system planning allowed screening of alternatives early in the AA/DEIS process.

Scoping/Screening

Early in the system planning process several candidate projects were identified for each travel corridor, including express buses, HOV lanes, and rapid transit (light rail and heavy rail). Technical analysis for each candidate project included cost estimates, ridership forecasts, and probable environmental impacts.

Since the system planning process examined alternative technologies and alternative alignments in each corridor, this information was available for the scoping meetings. As a result, staff were able to use this information to screen the alternatives during the scoping process to a smaller, more manageable set of reasonable alternatives, thereby reducing the magnitude of analysis to be performed during the remainder of the AA/DEIS process.

The screening process had the added benefit of documenting that many alternatives were considered, which is one intent of NEPA.

Expedited Status

The principal advantage of the expedited status was that our project was a high priority for FTA administration and technical staff. This allowed DART to get timely responses to documents that required FTA review and approval. A good working relationship was established between DART and FTA staffs. DART provided FTA with draft reports that had gone through a thorough editing and quality control exercise so that FTA could focus on the content of the reports. We also found it expeditious to simply conduct the additional analysis requested by FTA staff without overly debating the merits of what was requested.

Management

Before initiating the AA/DEIS, there was a commitment to complete it as soon as possible while maintaining the integrity of the analysis and the process. To achieve this, the project manager was prepared to address issues in a short time frame to keep the project team moving on schedule. This included taking controlled risks periodically. Staff also attempted to anticipate what would be needed early enough to begin work so that it would not affect the critical path. We started preparation of reports, analyses, forecasts, estimates, and other efforts as soon as possible so that progress would not be slowed.

SUMMARY

The recent allowance of an expedited AA/DEIS process was initiated by the U.S. Department of Transportation and FTA to encourage a stronger local effort to fund major capital transit investments. However, the mere availability of an expedited process does not ensure that an applicant's AA/DEIS process will be performed in a reduced period of time. The expedited process provides an opportunity for an applicant to reduce the time necessary to conduct an AA/DEIS provided that other factors are achieved.

DART's experience with the expedited AA/DEIS process provided two time saving opportunities: the results reports did not require formal approval by FTA, and FTA staff agreed to provide comments on reports requiring approval within 2 weeks. Both of these provisions reduced the time necessary to complete the process, and it was apparent on several occasions that DART's submittals were of a higher priority than other projects being reviewed by FTA staff.

Perhaps a more significant factor in DART's success with the expedited process was the preparation of an adequate foundation provided by the system planning efforts before the AA/DEIS. The use of FTA's CEI during system planning to evaluate each corridor's alternatives was essential in the identification of an affordable system plan. The availability of updated travel forecasting models during system planning eliminated the need to develop these models during the early stages of the AA/DEIS. DART was also able to quickly reduce the number of alternatives considered in the AA/DEIS because of system planning efforts that examined alternative technologies and alignments in each corridor. In addition, extensive community involvement during system planning resulted in a solid base of support for the system plan and, consequently, the AA/DEIS process.

This experience indicates that the expedited AA/DEIS process can decrease the amount of time necessary to conduct these studies. However, it does not significantly reduce the volume of work necessary to complete the studies. Rather, it compresses the time within which these studies may be accomplished.

Therefore, an applicant desiring to pursue an expedited AA/DEIS process must have an understanding of the intensive nature of the compressed AA/DEIS work efforts, the clear advantages provided by thorough system planning efforts, and the commitment of staff efforts necessary to truly result in an expedited process.

REFERENCES

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