

Integrating Major Metropolitan Transportation Investment Study Process with National Environmental Policy Act Process

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FHWA and FTA recently adopted statewide and metropolitan planning regulations in response to the Intermodal Surface Transportation Efficiency Act of 1991. These regulations, in part, created a process known as the major metropolitan transportation investment study that was designed to evaluate the effectiveness and cost-effectiveness of alternative transportation investments. One of the intents of this process is to integrate it with the environmental review process required under the National Environmental Policy Act of 1969 (NEPA). The implications of integrating the two processes and the differences between each approach are explored. Specifically, review agencies and the general public must be given adequate opportunity to evaluate the consequences of alternative actions at several levels, an activity that is often implemented most successfully through the NEPA process. The two processes must also be integrated in recognition of differences in level of detail available at various stages of analysis, since major investment study appropriately would be performed at a broad, conceptual level for a variety of modal and intermodal alternatives, whereas NEPA requires enough design detail for fully assessing the environmental impacts of a specific project. Finally, the integration approach must account for timing differences between actions at the metropolitan planning organization level and the project design level. It is suggested that the tiered or programmatic environmental impact statement (EIS) be applied as an approach to integrating major investment studies with NEPA under certain circumstances. The tiered EIS approach has the potential of providing a structure that enhances the cooperative process specified in the planning regulations, avoids redundant analyses, and accounts for differences in timing between planning and design efforts.

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and its various implementing regulations have established systems and processes intended to strengthen transportation planning and project selection in the United States. The process-oriented requirements were established as the statewide and metropolitan planning regulations of FHWA and FTA on October 28, 1993 (1). The changes in transportation planning practice engendered by these regulations evolve over time while transportation planners test and adapt approaches intended to fulfill the requirements and intent of the regulations. As is typical of process-oriented regulations, the actual implementation will most likely be subject to interpretation, and interpretations are likely to vary by situation.

One of the specific requirements of FHWA's and FTA's metropolitan planning regulations that has stimulated much discussion among transportation planners is that of the major metropolitan

transportation investment study. The complexity and uncertainty associated with this type of study is demonstrated by the variety of terms used by transportation agencies across the country to describe it, including major investment analysis, major investment study, major transportation investment analysis, and major transportation investment study/alternatives analysis. For purposes of this discussion, the general terms "major investment analysis" and "major investment study" will be used interchangeably throughout.

The intent of the major investment study is to identify early in the planning process the major investment alternatives and strategies that will most likely be the most effective and cost-effective when evaluated in relation to a variety of factors. However, the implication of the requirement for preparing a major investment study is that the total time involved from project or plan inception to final project approval under the National Environmental Policy Act of 1969 (NEPA) process may increase dramatically beyond the already time-consuming environmental process. The issue at hand is how to integrate the major investment study and NEPA processes in an effort to streamline the overall time required from beginning of project planning to final NEPA approval, and to do it in a manner that is consistent with the intent of both processes.

Before the published release of the federal metropolitan planning regulations, FTA required a combined alternatives analysis/draft environmental impact statement process for certain projects proposed with discretionary Section 3 "New Start" funding. This FTA combined process has been superseded by the major investment study, which does not explicitly integrate it with NEPA, although both FTA and FHWA are preparing new environmental regulations to modify their procedures in response to the new requirement. These regulations were anticipated to be published sometime in early 1995.

One potential method of integrating the major investment study and NEPA processes is that of adapting tiered or programmatic environmental impact statements (EISs) to respond to the early development and analysis of major transportation investment alternatives. Under certain conditions, this method appears to be a workable solution to streamlining and integrating the two processes, regardless of the actual revised environmental regulations that ultimately will be published by FHWA and FTA. The tiered EIS approach and its potential applicability to the major investment study requirement under certain circumstances is explored in further detail in this paper. The interpretation of the existing rules and regulations on major investment studies and tiered EISs and the resulting conclusions are entirely those of the authors and are presented in an effort to promote further understanding of the complex relationship between major investment analysis and NEPA, as well as

an attempt to identify an approach that may be most suitable for integrating the two processes under certain situations.

MAJOR INVESTMENT STUDIES

Fundamentals of Process

A major metropolitan transportation investment is defined in the FHWA and FTA metropolitan planning regulations as "a high-type highway or transit improvement of substantial cost that is expected to have a significant effect on capacity, traffic flow, level of service, or mode share at the transportation corridor or subarea scale" (1). Major transportation investments may include, but are not necessarily limited to (a) construction of new partially controlled principal arterials, (b) extension of partially controlled principal arterials for a distance of 1 mi or more (c) capacity expansion equivalent to one or more lanes on partially controlled principal arterials, (d) construction or extension of high-occupancy vehicle facilities or fixed-guideway transit facilities for a distance of 1 mi or more, (e) addition of lanes or tracks to fixed guideways for a distance of 1 mi or more, and (f) substantial increases in transit service on a fixed guideway.

The regulations further state that "where the need for a major metropolitan transportation investment is identified, and Federal funds are potentially involved, major investment (corridor or subarea) studies shall be undertaken to develop or refine the plan and lead to decisions by the MPO" (metropolitan planning organization) (1). In other words, any major federally funded investment that is proposed to result in a significant transportation improvement within an MPO's jurisdictional region must first undergo a major investment analysis to identify and evaluate all reasonable alternatives. Although the major investment studies may be performed by the MPO, the state, or the proposing transit operator, the study must be completed before the inclusion, or at least the finalization, of the particular investment in the transportation plan and transportation improvement program (TIP) prepared by the MPO and ultimately incorporated into the overall state plan and TIP. In this regard, the major investment analysis is intended to be an early planning tool used in decision making.

Major investment studies are intended to evaluate the effectiveness and cost-effectiveness of alternative investments or strategies, considering direct and indirect costs of reasonable alternatives and such factors as mobility improvements, safety, operating efficiencies, land use and economic development, financing, energy consumption, and social, economic, and environmental effects. These factors are essentially the same as the factors previously required to be considered as part of FTA's alternatives analysis process, although they have been expanded to include highway and transit options as well as multimodal options. The intent of the major investment analysis is to provide a very broad and well-balanced consideration of multimodal and intermodal choices to improve the performance of the transportation system within a given corridor (i.e., linear transportation service area) or subarea (i.e., nonlinear part of a metropolitan area). The intended result of the analysis is to identify the preferred alternative or set of alternatives appropriate for that corridor or subarea, after taking into account the full array of potential effectiveness and cost-effectiveness factors.

Relationship of Major Investment Study to NEPA

Since it is not the intent of this paper to provide a full interpretation or practical application of the regulations and requirements of major

investment analysis as a planning tool, no further discussion on this specific topic is warranted. However, it is appropriate to identify ways in which regulations relate this effort to the environmental studies required pursuant to NEPA. The preamble to the regulations specifically states that "these studies should be undertaken with the intent that they will substantially improve the linkage between the planning process and environmental review process" (1). The intent in this regard is to minimize or reduce redundancies in analysis as well as to incorporate early consideration of environmental impacts in all major transportation investment decisions.

The regulations allow the major investment studies to relate to the environmental studies in either of two ways. First, the major investment study can be used as input to an environmental assessment (EA) or EIS prepared subsequent to the completion of the study. Alternatively, a draft EA or EIS can be prepared as part of the major investment study, in order to address one or more of the effectiveness and cost-effectiveness evaluation factors identified earlier.

The first option establishes that an EA or EIS prepared for a specific project would incorporate by reference the findings of a previously prepared major investment study and the alternatives planning process leading to the selection of a preferred alternative or set of alternatives. Although this approach would allow the environmental documentation to focus on the preferred alternatives from the outset, thereby potentially streamlining the EA/EIS process, it does present an inherent risk that could result in an even longer approval process than if the full range of alternatives were considered initially as part of that process. This is because environmental and resource agencies such as the Environmental Protection Agency and the U.S. Army Corps of Engineers are less likely to become involved in a major investment study that is performed before and outside of the NEPA process than if all reasonable alternatives are identified and assessed equally as part of that process. Given the competing project commitments and time constraints on the staffs of such agencies, it is probable that unless and until the NEPA process is officially initiated and under way, these agencies will not be active participants in the early project planning efforts, even though provisions are made in the regulations to allow agency coordination. As a result, when the preferred alternative is presented to the agencies during initial project scoping under NEPA, the agencies conceivably could request reinvestigation of alternatives that have already been rejected or even conclude outright rejection of the preferred alternative.

The issue related to the first integration approach actually leads directly into a more fundamental issue. The fact that the major investment analysis is supposed to result in a selection of a preferred alternative or set of alternatives that would occur outside of the NEPA process could result in a basic violation of NEPA. The Council on Environmental Quality's (CEQ's) NEPA regulations specifically require that all reasonable alternatives be considered and presented in comparative form (2). Although only the preferred alternative identified through major investment analysis would be carried forth for NEPA documentation and review, other alternatives that were originally considered may also have been reasonable and should have been subjected to public review under NEPA. As a result, a literal interpretation of the intent of the major investment analysis to identify the preferred alternative would always eliminate any other alternatives from any real consideration within the EA/EIS process. This outcome could generate a high level of controversy from environmental and other review agencies, as well as members of the public, who believe that the sponsor and lead federal agency (or agencies) had reached a decision before even starting the NEPA process.

The second option of integrating the major investment studies and the environmental process would eliminate the potential problem associated with the first scenario because the sponsor agency and the lead federal agency would actually develop a draft or even a final federal environmental document as part of the corridor or subarea study. However, there are two basic problems with this second approach to integrating the major investment analysis and NEPA. The first is that the level of analysis of alternatives required for the two separate procedures is different. For major investment, a broad array of modal and intermodal alternatives would be developed and considered in a broad fashion since the intent is to identify a single strategy or combination of strategies that best satisfies the particular need within the subject corridor or subarea. Therefore, the level of environmental information that is required at this stage is much less detailed than that required for a full EA or EIS analysis. It would be inappropriate, in fact, even to attempt to study the broad range of alternatives at this point in the same level of detail as in a conventional EA or EIS, since it is inevitable that many of these alternatives will be eliminated from further consideration on the basis of factors other than environmental, and therefore such study would result in a great deal of wasted effort. Similarly, it is unlikely that the broad array of alternatives developed at the major investment analysis stage would be at a sufficient level of detail to allow a complete environmental investigation to occur at the level required for a conventional EA or EIS.

The other problem associated with the second approach is one of timing. The regulations require that the major investment study be prepared before the inclusion or finalization of a given project or group of projects on the MPO's transportation plan and TIP. Once the major investment study has been completed and the project has been included in the MPO planning, it could be several years before it is intended to achieve the level of design necessary to evaluate the environmental impacts of the project under NEPA. Therefore, if major investment analysis is integrated with NEPA using a conventional EA or EIS approach, the process of environmental documentation and review under NEPA could not be completed until a sufficient level of design has been achieved. The result would be a seemingly endless NEPA process that would delay any single element or project proposed within a given corridor or subarea from proceeding until the process has been completed entirely for all of the components of the preferred alternative.

Hypothetical Case Study

Using a hypothetical example to illustrate each of these issues, suppose that a major investment analysis of a 20-mi corridor in a rapidly suburbanizing area is proposed. The corridor already contains an arterial highway running from end to end, ranging from two lanes in some areas to four lanes in others. In general, this highway and some of the approach roadways at major intersections suffer from extreme congestion problems during peak commuting hours. Two separate bus lines provide service along portions of the corridor, and a third line crosses the corridor from end to end. Other modes and transportation services are virtually nonexistent. Fifteen basic alternatives or combinations of alternatives are identified initially as being reasonable, including construction of a new limited-access highway on any of three general alignments, widening of the existing highway, specific spot and intersection improvements, the use of a variety of transportation control measures (TCMs), the provision of pedestrian and bicycle facilities, transit service upgrades, and the construction of one or more park-and-ride facilities.

The broad range of alternative strategies for reducing the congestion within the corridor necessitates a broad level of analysis for assessing the relative ability of each to respond to the overall corridor need. Initially, each alternative would be developed to a sketch level of detail in order to assess each one's effectiveness, cost-effectiveness, general environmental issues, operational efficiencies, potential financing mechanisms, relative degree of safety, and so on. Unless it becomes the intent of the sponsor and lead federal agencies to perform a complete and detailed analysis of all 15 alternatives without knowing which will actually satisfy the need, the outcome of the sketch level of analysis could be to select the preferred alternatives or to narrow the range of viable choices to a more manageable number that will be studied in some greater level of detail under NEPA. Either way, at the conclusion of the major investment study, the preferred alternatives will be identified and included on the MPO's transportation plan and TIP.

Assume that in the hypothetical example, the major investment study resulted in a preferred alternative that included a new limited-access highway in addition to construction of one park-and-ride lot. Under the first scenario of integrating major investment analysis and NEPA, once the various review agencies and general public become involved in the project via the NEPA review process, it would not be surprising if they were to disagree with the preferred alternative combination that was previously chosen and argue that a different alternative—such as a park-and-ride lot in conjunction with transit service upgrades, spot improvements on the existing highway, and several TCMs instead of the new limited-access highway—would be more appropriate. In this case, the fact that a preferred alternative was already selected without their participation becomes in itself a major issue, even though input may have been solicited unsuccessfully from them during the course of major investment study preparation due to their existing commitments on NEPA-related projects. A fundamental disagreement between resource agencies and the project sponsor agency on the composition of the preferred alternative could force the sponsor agency to reconsider its earlier decision, thereby requiring a new alternative combination to be selected with concomitant additional environmental investigations. The result could be a lengthier review and approval process because of the lack of specific review authority provided to the resource agencies outside the NEPA process and, therefore, the inability of those agencies to become involved until after the major investment analysis is completed.

Similarly, the general public would be less likely to become involved in the major investment decision-making process if it precedes NEPA because of the more conceptual nature of this process, especially given that the results of major investment analysis become further diluted in the metropolitan long-range transportation plan. In this regard, the most meaningful public involvement usually occurs when people are aware that they may be affected directly by a design or location decision, which would normally happen at the time that more detailed information becomes available, such as when an EA or EIS is being undertaken.

Consider the hypothetical example again using the second option for integrating major investment analysis and NEPA. Given the diversity of the alternatives being considered, the first step should be a determination of how well each alternative satisfies the overall corridor problem and need, with an analysis of environmental impacts at a level sufficient to compare generally each against the others. The level of detail required to perform such an analysis could be purely conceptual, with plan drawings at a scale of 1 in. = 400 ft or smaller. This level of detail, used in conjunction with traffic demand studies, is certainly adequate to determine whether a par-

ticular alternative would satisfy demand and to provide a general indication of how each would most likely affect the environment so that a comparative evaluation could be made.

On the basis of this information, a preferred alternative could certainly be selected as part of the major investment analysis, but an insufficient basis exists for evaluating and making decisions about alternatives for conventional EA or EIS purposes. For instance, it should be possible at this stage to determine if only construction of a new limited-access roadway, with or without other improvements as well, would satisfy the need for the corridor, as well as the number of lanes and interchanges that are appropriate. Conversely, it could be determined if a variety of TCMs, improved transit facilities and services, and the construction of a park-and-ride lot would meet the demand and minimize environmental impacts. Since details of the number of acres of wetlands and farmlands to be affected and the full range of other potential impacts cannot be determined precisely until more detailed plans are developed, either a decision on the preferred alternative must be postponed until later in the NEPA process, when greater detail on the alternatives has been developed, or more detailed plans must be prepared from the outset. Either way, the preferred alternative should be identified early enough in the process so that it can be placed in the MPO's or state's transportation plan in a timely fashion.

The timing issue associated with the second integration approach can also be illustrated with this hypothetical example. Once the new limited-access highway and park-and-ride lot have been identified as the projects in the preferred alternative and have been included in the MPO's transportation plan and TIP, it is possible that one of the projects—say, the highway—is scheduled to be implemented several years after the other—in this case, the park-and-ride lot. Accordingly, the design of the highway would probably lag behind that of the park-and-ride lot by several years as well. By linking the major investment study with a conventional EA or EIS process, delays could be experienced since the EA/EIS could not be completed to an adequate level of detail until the greater level of design of both projects is completed. Therefore, in this case, the overall approval process could actually take much longer than expected, despite the intent to streamline the overall process by integrating major transportation investment analysis and NEPA.

Obviously, the particular issues just presented are not guaranteed to develop on all projects, but the potential does exist. Given this possibility, if would be preferable to use an approach that would satisfy the intent of integrating major investment analysis and NEPA while reducing the potential for these issues to occur. One approach that appears to have some merit in this regard and deserves further consideration before the federal environmental regulations are revised by FHWA and FTA is the use of tiered EISs, including a programmatic or Tier 1 EIS to address the full range of broad alternatives considered as part of the major investment study, followed by one or more project-specific EAs or EISs. Details on programmatic or Tier 1 EISs and their potential use for this purpose follow.

TIERED EIS PROCESS

Fundamentals of Process

The concept of tiered EISs is based on the fact that the CEQ, in its NEPA regulations, allows for a process known as tiering (2). This process refers to the coverage of general matters in broader environmental impact statements (such as for a program, plan, or pol-

icy), followed by more focused, narrower statements or analyses (such as for a site-specific project) that incorporate by reference the general discussions of the broader-based document. Tiering has been determined by CEQ as being appropriate under either of two basic conditions:

1. When a program, plan, or policy is evaluated within an EIS, followed by a separate EIS or analysis of a program, plan, or policy of lesser scope or a site-specific project; and
2. When a specific action at an early stage (such as need and site selection) is evaluated within an EIS, followed by a supplement or subsequent EIS or analysis of a more specific element (such as environmental mitigation).

Programmatic or Tier 1 EISs, which would be the first-tiered environmental documentation required under either of the preceding conditions, represent an opportunity to focus on environmental impacts of federal programs before the commitment of major funding, as well as an opportunity to consider environmental issues early in the planning process. Programmatic EISs make up only a small percentage of the total EISs prepared throughout the country during a given year, although use of such documents is increasing as more agencies recognize the value and legal validity of programmatic assessment. Although guidance on preparing environmental documents at a programmatic level is limited, traditionally the level of detail available for analyzing the environmental effects at this stage is somewhat broad and general, while projects are developed to greater specificity for subsequent environmental documentation. Even so, the programmatic EIS must contain enough information to conduct a meaningful evaluation.

In the transportation arena, FHWA has included the concept of preparing tiered environmental documents in its own regulations prepared for implementing NEPA and CEQ's regulations (3). These regulations state the following:

For major transportation actions, the tiering of EISs as discussed in the CEQ regulation . . . may be appropriate. The first tier EIS would focus on broad issues such as general location, mode choice, and areawide air quality and land use implications of the major alternatives. The second tier would address site-specific details on project impacts, costs, and mitigation measures.

Despite the provision for tiered EISs in FHWA's regulations, the concept has been used only rarely for highway development projects in this country. Programmatic studies are known to have been utilized as a method of preserving transportation rights of way in rapidly developing areas. For instance, a programmatic EIS, referred to by the Nevada Department of Transportation and FHWA as a Tier 1 EIS, is being prepared for that purpose for a proposed beltway around the western and northern perimeters of Las Vegas. A Tier 2 EIS addressing the actual transportation improvement will be prepared after the proposed corridor(s) have been preserved and the project has been designed to a greater level of detail.

Although tiered studies give an agency the opportunity to begin the NEPA process for a project that is not yet well developed, some opponents of the tiered assessment process have argued that such studies result in an additional and unnecessary stage of NEPA review, which ultimately increases the total time involved and results in duplication of analysis between stages. Although there may be some truth to these claims at times, tiered EIS studies do have a place in the NEPA process and can yield overall time benefits under appropriate circumstances.

Integration of Tiered EIS Process with Major Investment Analysis

As discussed previously, metropolitan planning regulations state that the major investment analysis should be undertaken and preferably completed relatively early in the planning process, since the scope and design concept to be included in the MPO's or state's transportation plan cannot be made final until such analysis is completed and a preferred alternative or combination of alternatives is identified. The wide variety of potential transportation alternatives to be considered for major investment, each developed to a conceptual or general level of detail, appears to make an environmental impacts evaluation particularly suited to the tiered EIS approach. In this manner, the alternatives assessment and selection of preferred alternatives can be performed early in the planning process, using limited design detail, but still be covered by NEPA review. Therefore, when the MPO decides to include a project in its transportation plan and subsequently in its TIP, the selection of that project will already have complied with NEPA as well. In turn, the project sponsor agency would be satisfied before initiating a more detailed design and environmental evaluation that the project is acceptable to the MPO and has a "real" commitment to funding allocation. This would also ensure that all relevant review and resource agencies are involved in the alternatives study from the outset because it will be incorporated into a formal NEPA review process, complete with project scoping and public outreach.

Figure 1 identifies a reasonable sequence of events that illustrates the potential to integrate major investment analysis into the NEPA process using a tiered assessment approach. The sequence begins with an initiation of conceptual alternatives development, encompassing the full range of potential transportation improvements for a given corridor or subarea, and the initiation of a Tier 1 EIS. During the course of Tier 1 EIS preparation, the major investment analysis would be undertaken, including an analysis of purpose and need and a variety of broad transportation concepts, culminating in the selection of a preferred alternative or set of alternatives. The Tier 1 Draft EIS would then present the results of the evaluation of all reasonable alternative concepts and identify the preferred alternative, assuming that the major investment analysis is completed by that time. Otherwise, the preferred alternative would not be presented until the Tier 1 Final EIS. Either way, this entire Tier 1 EIS process would precede the MPO's inclusion or finalization of the project on its transportation plan and TIP.

While the process of including the project on the plan and TIP is under way (or already completed), the preferred alternative can be refined and developed to a greater level of detail. At this point, a more specific and focused environmental document, which could be either an EA or Tier 2 EIS depending on the scale of the project, would also be initiated. During this analysis details pertaining to project design and location, possibly resulting in several alternatives in this regard, would be developed and studied in terms of environmental impact. Preferably, the project already would have been evaluated for its air quality conformity and included in the MPO's plan and TIP prior to Draft EA (if applicable) or Tier 2 Draft EIS publication. However, these actions for which the MPO is responsible would have to be completed at least before Tier 2 Final EA/EIS completion and subsequent federal project approval.

Use of Tiered EIS Process in Hypothetical Case Study

Applying the previous sequence of events to the hypothetical example presented earlier provides a clear picture of the entire process.

During project initiation, a long list of potential alternative transportation strategies would be developed and subjected to a qualitative analysis in order to reduce the field to 15 alternatives that appear to be reasonable given the specific nature of the problem and the corridor or subarea. At this point, the 15 broad alternatives would be developed to a conceptual level and presented to resource agencies and the general public, as appropriate, through Tier 1 EIS project scoping. As major investment analysis proceeds, these 15 alternatives would be evaluated in terms of ability to satisfy need and the complete range of other evaluation factors required for consideration, including an environmental analysis to a level appropriate given the conceptual nature of the alternatives. The result is the selection of a new four-lane, limited-access highway several miles to the north of the existing arterial highway running through the length of the corridor, in addition to the construction of one park-and-ride lot at a proposed interchange near the middle of the project, with the park-and-ride intended to be constructed several years before the new highway. This result of the major investment study and the information on all 15 alternatives investigated are then presented in the Tier 1 Draft EIS, before being modified in the Tier 1 Final EIS in response to public comments received. At this point, the regulatory and other resource agencies should have reached a general acceptance of the purpose and need and the general alternative concepts.

The MPO would then initiate air quality conformity studies to ensure that if the construction of a new four-lane, limited-access highway and park-and-ride lot were to be included on its transportation plan and TIP, they would still conform to the state implementation plan (SIP). At that point, both elements of the preferred alternative would be approved by the MPO.

Once it is known that the project will conform with the SIP and is being included in the MPO's plan and TIP, the proposed new highway alignment and park-and-ride lot can be engineered to a greater level of detail, such as a scale of 1 in. = 100 ft or larger. In the interest of time, however, the project sponsor may begin its Tier 2 studies while the MPO is preparing its SIP conformity work and transportation plan and TIP. At this point, minor location and design alternatives can be developed in an attempt to minimize environmental impacts, provided that they do not change significantly the results of the major investment study that was already completed. These alternatives would be presented in the Tier 2 environmental documents, as appropriate, before final approval. Because the general concepts were considered and approved in a Tier 1 EIS, it is possible that at this stage of project development and evaluation, an EA, or even separate EAs for each part of the project, will suffice rather than a full Tier 2 EIS. Since the park-and-ride lot and the new highway are proposed to be designed and constructed under separate schedules, it may be preferable and appropriate to prepare separate environmental documents, assuming that they have independent utility and the cumulative effects of both projects were addressed in the Tier 1 EIS.

Circumstances of Applicability of Tiered EIS Approach

The most appropriate application of the tiered EIS approach to major investment study is in situations for which a wide variety of modal and intermodal options are available and reasonable to satisfy an apparent need within a corridor or subarea, such as the case presented in the hypothetical case study. The actual number of options that would have to exist before a sponsor agency could anticipate the benefits of using a tiered environmental approach is purely subjective and would undoubtedly be applied on a case-by-case

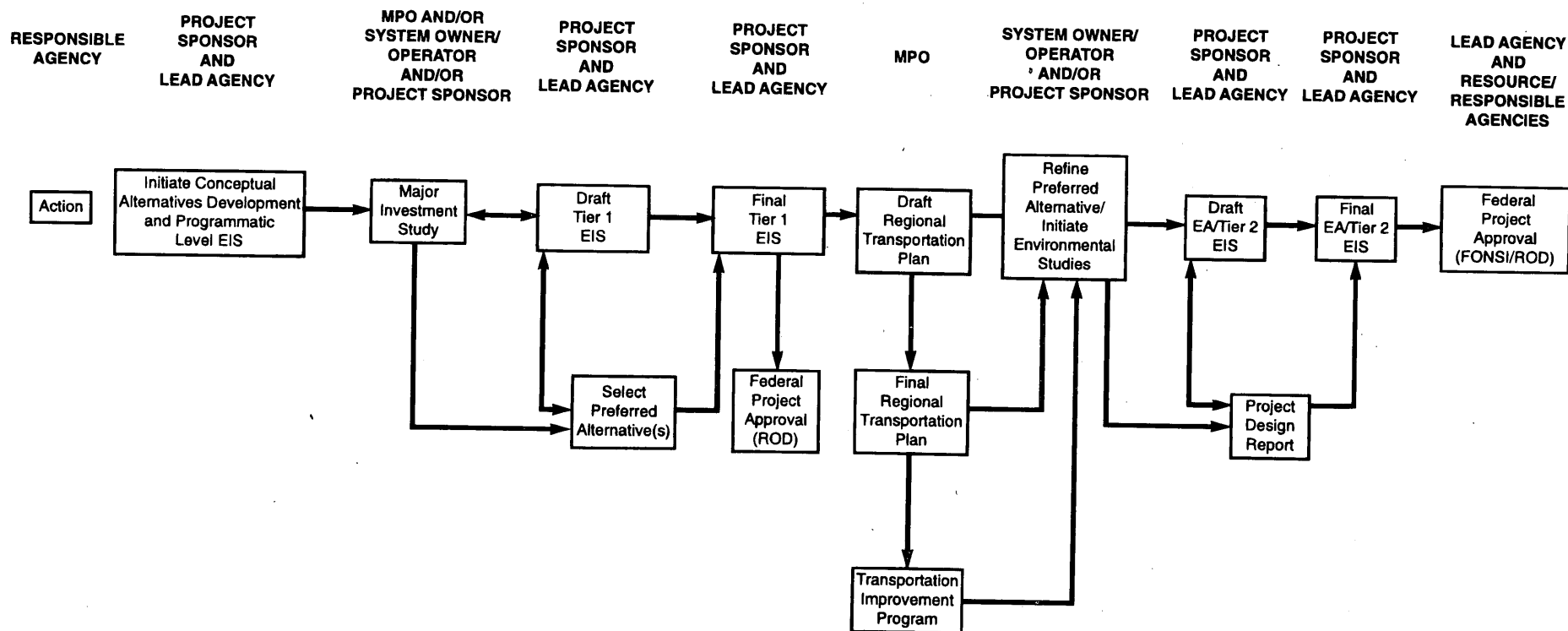


FIGURE 1 Proposed process for integrating major investment analysis with NEPA using tiered assessment approach.

basis. This approach is also particularly applicable when there is anticipated to be significant opposition to a particular project, or at least to a particular alternative. By using a tiered EIS approach, input from the agencies and the public can be received even before the full range of modal and intermodal options is developed. The conclusion of the major investment study and Tier 1 EIS, at least in theory, would be a general approval and acceptance of the preferred alternatives before any further development or consideration of the specifics of that alternative or combination of alternatives is performed.

It is recognized that without a sufficient number of transportation system alternatives available within a corridor or subarea, application of the tiered EIS approach would not necessarily offer the best opportunity for streamlining the overall approval process and allowing a project to get under construction as quickly and efficiently as the project need demands. If the types of options are limited, then a sponsor agency can more quickly move to the specifics of a given type of alternative. However, even in such cases, adequate demonstration and documentation within the NEPA process that other options are virtually non-existent within the corridor or subarea may be the key to a project's success.

For situations in which a wide variety of modal and intermodal options initially are proposed to be considered in the major investment study, and when there is a high potential that the preferred alternative could include more than one project within the corridor or subarea, the potential is also high that the individual projects will be designed on separate schedule tracks. It would be entirely plausible if one or more of the projects were proposed to occur a number of years after the first. This difference in schedule may be due to funding limitations or higher priorities at the state and MPO levels. The tiered approach allows the individual projects to proceed on separate schedules, thereby relating the NEPA requirements with the actions proposed in the transportation plan and TIP more effectively and efficiently.

CONCLUSIONS

This paper has presented a potential approach for dealing with a complex set of new regulations requiring that a major investment study be performed whenever a major transportation investment is being contemplated. The ability to develop a workable approach for integrating major investment analysis into the NEPA process is an important element in evaluating the long-term success of this new requirement for alternatives assessment. The tiered EIS approach that is presented for integrating the two separate processes is an attempt to demonstrate to transportation planners and transportation agencies that workable options do exist, even if they require the consideration of techniques that traditionally have been avoided whenever possible. Under certain circumstances, the tiered EIS approach appears to have the potential to successfully link major investment analysis and NEPA, provide a structure for regulatory agency and public involvement, avoid redundant analyses, and allow for differences in timing between the MPO's actions and the project sponsor's design development efforts.

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Publication of this paper sponsored by Committee on Environmental Analysis in Transportation.