

## Part I Planning and Project Development

49 USC 5309(e)(1)(A) establishes a process for the planning and development of New Starts projects consisting of alternatives analysis and preliminary engineering (the satisfactory completion of which results in the commencement of final design). This process is presented graphically in Figure I below and discussed throughout the following sections of this guidance.

### [Figure I Planning and Project Development Process for New Starts Projects](#)

FTA intends that this process (through the completion of preliminary engineering) be carried out as part of the overall metropolitan planning and environmental review processes, as specified by 23 CFR Part 450 *FTA/FHWA Joint Final Rule on Metropolitan and Statewide Planning* and 23 CFR Part 771 *Final Rule on Environmental Impact and Related Procedures*, respectively. As such, planning and project development activities for New Starts projects should not require any more rigor or detailed technical analysis than would be expected for the adequate study and subsequent development of any major transportation (transit, highway, or multimodal) project in a given corridor. This analysis includes (among other activities) the identification of specific transportation problems in the corridor; the definition of reasonable alternative strategies to address these problems; the development of forecasts for these alternatives in terms of environmental, transportation, and financial impacts; and an evaluation of how each alternative addresses transportation problems, goals, and objectives in the corridor. These analytical activities are intended to provide local decisionmakers with the necessary information on which to base the selection of a specific transportation project design concept and scope for inclusion in the fiscally constrained long range plan and to advance it into preliminary engineering and the completion of the environmental review process.

FTA emphasizes that a locally managed multimodal transportation planning and project development process simply reflects a "common sense" approach to problem solving. At the regional or "systems" level, (carried out as part of the metropolitan planning process) this process entails an inventorying of current and forecast travel patterns, an identification of regional transportation problems and issues, and the prioritization of transportation corridors in greatest need of more detailed planning and analysis. Systems planning further provides a framework for identifying systemwide service, fare and other policy parameters, as well as the short- and long-range regional transportation network improvements to be assumed in subsequent planning analysis. A corridor-level analysis then focuses on a specific transportation need (or set of needs), identifies alternative actions to address these needs, and generates the information needed to select an option for implementation. The analysis typically addresses such issues as costs, benefits, environmental and community impacts, and financial feasibility to support project selection. Consequently, an alternatives analysis spans a wide range of technical disciplines, ranging from engineering to patronage forecasting to the natural and social sciences. It must be noted that this analysis takes place within the context of a proactive public involvement effort to ensure that it both responds to issues of concern to the community *and* is presented in a way that facilitates public understanding of its technical results such as anticipated costs, transportation benefits, and adverse impacts.

In many respects, systems and corridor-level planning are key steps in project development since it is at these points that the context is set for the selection of a project for implementation. The alternatives analysis study establishes the improvements that will be achieved, the costs that will be incurred, and the environmental consequences that will result. Subsequent project development activities undertaken in preliminary engineering focus on the refinement of the

selected project's design and alignment, the scope of environmental mitigation measures, and the completion of the project's financial plan (including securing local funding commitments to construct and operate the proposed project).

Ideally, then, the planning and project development process reflects a continuum of policy development, technical studies, and decisionmaking activities, where broad regional problems are identified and prioritized; options for addressing specific problems in specific corridors are identified, evaluated, and narrowed; and optimal investment strategies are selected and advanced for more detailed analysis and, ultimately, implementation and operation. The following briefly describes the major phases of this process: alternatives analysis (AA); preliminary engineering (PE); and final design. The following further provides specific guidance for sponsors of candidate New Starts on the planning, environmental, and project management milestones that FTA considers before accepting a request to advance projects through this process (i.e. from AA into PE, and from PE into final design).

### ***1.1 Alternatives Analysis***

A corridor planning study in which one or more of the alternatives under study is, or includes, a fixed guideway facility is often referred to as an alternatives analysis. The name "alternatives analysis" has as its basis the New Starts planning provisions contained in Federal legislation; in fact, alternatives analysis is synonymous with multimodal corridor planning consistent with the principles of both the major investment study (MIS) process practiced in many areas around the country, and the Draft Environmental Impact Statement (DEIS) required by the National Environmental Policy Act of 1969 (NEPA). Regardless of what the study is called, its intent is the same: to identify and compare the costs, benefits, and impacts of a range of transportation alternatives as a means of providing local decisionmakers with the information necessary to implement the most appropriate transportation solutions in priority corridors.

Alternatives analysis can be viewed as a bridge between systems planning at a metropolitan scale (which identifies regional travel patterns and transportation corridors in need of improvements) and preliminary engineering (where a project's design is refined sufficiently to incorporate the avoidance, minimization, and mitigations necessary to complete the environmental process). AA is the process for reaching a broad consensus on exactly what type of improvement(s) best meet locally defined goals and objectives for a specified corridor. Because it involves specialized technical analyses and an evaluation of transportation alternatives that have varied effects on the surrounding community, the alternatives analysis is necessarily a collaborative process. The AA study typically involves local transportation planning agencies (including the metropolitan planning organization) and service providers, local governments, state and Federal resource agencies, potential funding partners, and (through a formal citizen participation process) the general public.

As with the MIS, there is a multitude of ways that an alternatives analysis can be coordinated with the environmental review required by NEPA. NEPA itself mandates that the EIS reflect an analysis of all reasonable alternatives, so the careful coordination of the alternatives analysis and NEPA review is essential to the efficiency of the study and to public and interagency understanding of the process. Various coordination methods have been used, such as "incorporation by reference" to carry the alternatives analysis results into a NEPA document, or use of a first-tier or programmatic EIS as an alternatives analysis. While the decision to conduct the AA either "within" or "outside" the NEPA process is an important milestone which should be agreed upon as early as possible within the study process, FTA emphasizes that the appropriate level of analysis is a function of the complexity of the corridor and its transportation needs, not of the regulatory framework. The level of analysis should be commensurate with the planning decision at hand, that is, the analysis of every issue should be carried just far enough to make an

intelligent selection of a preferred transportation design concept and scope from the alternatives available. The National Transit Institute, through funding provided by FTA and FHWA, is developing a series of training courses and related materials on the linkage between planning and NEPA, which will provide further detail on the relationship between alternatives analysis and NEPA review and environmental documentation.

The alternatives analysis consists of a number of important activities, each of which is guided by key planning principles. These activities are introduced and described below. An over-riding principle of the alternatives analysis is the early and continuing participation by FTA in the study process. It is FTA's intent to partner with local agencies in the conduct of their corridor planning activities to facilitate the analysis and to ensure that all FTA and other Federal requirements are met.

As noted previously, more detailed information on the conduct of an alternatives analysis can be found in FTA's *Procedures and Technical Methods for Transit Project Planning*.

### **I.I.I Scope of Work**

Corridor planning can be a highly complex technical process. When fixed guideway alternatives are involved, the process can be as challenging as any transportation planning effort can be. Although there are a number of technical and managerial difficulties inherent in conducting such studies, corridor planning proceeds most smoothly when the work to be done by each participating agency - and the time and resources required to do the job - are carefully documented in advance.

Consequently, a well-crafted scope of work is a critical component to the success of the planning effort. Ideally, the scope of work is a management tool which includes not only a detailed description of technical activities (tasks and subtasks) to be performed in the study, but identifies the relationship between these activities and defines their deliverables; clarifies the roles and responsibilities of agencies participating in the study; describes the organizational structure which guides the analysis, including the make-up of any policy or technical advisory committees; identifies major review and decision points (including those requested by FTA, as documented by this guidance); and sets forth a realistic schedule and budget for completing the study.

Corridor planning studies will include tasks for data collection, estimating the capital and operating costs of each alternative, forecasting ridership and other travel characteristics, assessing transportation, social, and environmental impacts, undertaking public involvement activities, and evaluating funding and financing strategies. These activities represent the technical underpinnings that support all corridor-level investment decisions. Nevertheless, the scope of work for each AA study will be unique, because it reflects the status of planning in the corridor, the kinds of alternatives to be considered, and other issues of importance to local decisionmakers.

The scope of work must clearly indicate the level of effort that will be required for each task. Level of effort will be a function of the amount of detailed information needed to make a reasoned decision from among the alternatives being studied and (for New Starts projects) to develop the necessary information on project justification and local financial commitment to support a request to FTA to advance a locally preferred alternative (LPA) through project development. This information includes the development of the transportation system user benefits measure, which FTA uses to evaluate the cost effectiveness and travel time benefits of candidate New Starts projects. Calculation of user benefits may require some modifications to the regional travel demand model set employed in the alternatives analysis study effort in order to produce the set of

fixed person trip tables and generalized cost files which are read into the "Summit" software developed by FTA to generate the measure; this modification should be included in the scope of work. Furthermore (and more importantly), the reports and thematic maps produced by Summit should be used by the technical study staff as a diagnostic tool for reviewing the completeness (and comparability) of each alternative's operating plan; for identifying potential transportation network coding errors; for re-evaluating model specifications; and to thoroughly examine how the alternatives may impact (positively or negatively) discreet travel markets, in terms of transit travel times and costs. Ample time and resources for this analysis, and the subsequent corrections and modifications to the alternatives and/or forecasting tools that it may result in, should be provided for in the study scope and schedule. More information on the user benefits measure is provided in Section II.I.I of this guidance.

FTA further notes that the scope of work must provide for all necessary documentation of information to support the undertaking of a Before and After Study, if the project sponsor intends to pursue a Full Funding Grant Agreement for the resulting LPA. This requirement is generally satisfied by an adequate documentation effort (in the form of technical reports or appendices) of the independent variables, assumptions, and methodologies used to define transit service levels and to estimate capital and O&M costs and ridership patterns. Additional guidance on documentation of the AA study effort (and the Before and After Study) is provided in Section I.IV of this guidance and in FTA's *Procedures and Technical Methods for Transit Project Planning*.

Corridor planning schedules and costs vary widely from one area to the next. FTA has observed that many study schedules are overly ambitious in terms of the time needed to complete the work effort, i.e. collect data, code the transportation networks, validate and run the travel demand models (including equilibration of transit operating plans), perform analysis, provide for adequate public involvement, etc. It is not unusual for alternatives to be refined during the study process, and sometimes modifications in alignments and system access points require additional analysis not adequately accounted for in the study schedule. Consequently, many studies do not meet planned milestones, resulting in schedule slippage which may undermine stakeholder confidence in the analytical effort and its results and which may further result in cost overruns or the need to re-allocate budget among study functions. On the other hand, where schedule is maintained but necessary analysis foregone, the study will likely yield flawed results, leading to the presentation of inaccurate information to decisionmakers on the true costs and benefits of studied alternatives.

As an aid to reasonable schedule setting, and to help ensure that the work is complete enough to satisfy both good planning practice and FTA requirements for alternatives analysis, FTA requests the opportunity to review and comment upon the scope of work of local corridor planning studies that may result in the selection of a transportation improvement requiring New Starts funding.

### **I.I.II Problem Statement, Planning Goals and Objectives, and "Purpose and Need"**

A clear understanding of transportation problems in a corridor plays a critical role in the alternatives analysis study. A well-conceived and documented statement of the problem for which alternative solutions are being analyzed is therefore a key early step of the corridor planning process. Although it is specifically required by NEPA regulations and typically serves as its own chapter in a Draft and Final EIS, the definition of a concise, direct "purpose and need" statement can help guide the conduct of any corridor-level analysis, whether or not it is a part of a NEPA review. Purpose and need for a project establishes the problems which must be addressed in the study; serves as the basis for the development of project goals, objectives, and evaluation measures; and provides a framework for determining which alternatives should be considered as reasonable options in a given corridor. More fundamentally, the statement of purpose and need serves to articulate – and justify - why an agency is proposing to spend potentially large amounts

of taxpayer's money to study and implement a project, which may cause significant environmental and community impacts, and why these impacts are justified.

The systems planning process typically serves as the primary source of information for identifying specific corridor problems and establishing the goals and objectives for an improvement. Information on existing and forecast travel demand, the condition of transportation infrastructure, air quality, traffic accident rates, etc., all contribute to problem identification and the need for improvements. From the identification of the problem springs the development of project goals and objectives that specify, in part, the desired outcomes of an improvement to the corridor. "Purpose and need," (either within or outside of the NEPA process) then, frames subsequent analytical requirements in that the information generated from the alternatives analysis must be able to respond to the problems, goals, and objectives derived from it.

A study's problem statement and supporting goals and objectives for improvement should be developed with great care. Definition of a vague problem – for example, the need for additional transportation capacity in a corridor – could result in a very large number of alternatives which could be thought of as being "reasonable," thus widening the analysis to more options than what ideally needs to be considered. On the other hand, too narrow a definition might unduly constrain the range of alternatives. In no case should the need for a project be expressed in modal terms (e.g. need for additional highway lanes; need for a light rail system). Rather, need is a function of the problem at hand (need to improve mobility, need to reduce vehicular traffic through a community; etc.). The ideal problem statement results in the development of a manageable number of distinct strategies designed to achieve some level of improvement in forecast conditions. Simply put, if an alternative does not address the "purpose and need" for a project it should not be included in the analysis.

The Federal Highway Administration's (FHWA) *Guidance for Preparing and Processing Environmental and Section 4(f) Documents* has identified a number of considerations which may assist in the explanation of the need for a proposed action. Although the guidance applies to analyses conducted under NEPA, the following items reflect (for illustrative purposes; they are not intended to be all-inclusive) several common sense questions and considerations that need to be recognized early in any alternatives analysis study:

- *Project Status* – What is the planning history of the corridor, including actions taken to date, other agencies and governmental units involved, actions pending, schedules, etc.
- *Capacity* - Is the capacity of facilities and services in the corridor inadequate for the present movement of people and goods? Projected demand? What capacity is needed? What time of day? What is the level(s) of service for existing and proposed facilities and systems?
- *System Linkage* - Is the proposed project a "connecting link?" How does it fit in the transportation system?
- *Legislation* - Is there a Federal, State, or local governmental mandate for the action?
- *Social Demands or Economic Development* - New employment, schools, land use plans, recreation, etc. What projected economic development/land use changes indicate the need to improve or add to system capacity?
- *Modal Interrelationships* - How will the proposed alternatives interface with and complement the performance of highways and transit systems, airports, rail and port facilities, etc.?
- *Safety* - Is the proposed project necessary to correct an existing or potential safety hazard? Is the existing traffic accident rate excessively high? Why? How will the proposed alternatives improve it?

Perhaps most important is the role of a focused statement of purpose and need in galvanizing community awareness and public support for the study. Within the context of the metropolitan planning process, the public presumably has been involved in identifying pressing accessibility and mobility needs throughout the region. Engaging the affected public in the development of a statement of the rationale and dimensions of an ensuing corridor study firmly places it within the region's documented needs agenda. This, in turn, should facilitate a better public understanding of the importance of the study effort, as well as broader support for the study's findings and recommendations.

As part of its desire to provide early and ongoing assistance to local corridor planning efforts, FTA requests the opportunity to review and comment upon the problem statement and corresponding goals and objectives developed for every alternatives analysis which is likely to result in the selection of a transportation improvement requiring Federal funding.

### **I.I.III Definition of Alternatives**

The development of the various alternatives to be considered in the alternatives analysis process follows closely after the definition of purpose and need. The definition of these alternatives is a very important part of the study process. Without a set of alternatives that a) meet the study's problem statement and goals and objectives for improvement; b) are structured to isolate the differences between potential solutions to an identified transportation problem; and c) highlight the trade-offs inherent in the selection of a preferred alternative, even the highest quality technical analysis cannot produce the full set of information needed by decisionmakers.

The development and definition of alternatives is typically an iterative process. FTA's *Procedures and Technical Methods for Transit Project Planning* outlines three distinct phases in the development of alternatives. First, a broad *conceptual definition of alternatives* may be defined within systems planning, and refined through subsequent analysis of reasonable modes, alignments, and operating strategies. Initial activities of the corridor analysis are focused on narrowing the range of alternatives to a more manageable number to carry forward in the study. This "screening" and further refining of alternatives typically results in a *detailed definition of alternatives*. Ultimately, these surviving detailed alternatives - which include operating policies (fares, service frequencies, capacities) feeder bus plans, parking (capacities and user costs) and other policy and design features - are refined, analyzed, and documented in what is typically titled a *Final Definition of Alternatives Report*. FTA requests the opportunity to review the alternatives at the point of their detailed definition, and again in the *Final Definition of Alternatives Report*, as a part of its ongoing review of the technical alternatives analysis process and as a basis for its selection of a New Starts Baseline Alternative.

As noted, the set of "build" alternatives carried through an alternatives analysis must address the "purpose and need" for considering a major transportation investment in the corridor and should encompass a range of reasonable options, including low, intermediate, and high cost strategies. This range should include "minimum operable segments" of fixed guideway alignments, to provide flexibility in advancing a project should not all desired funding be available. In order to maintain the comparability of the benefits of alternatives, each alternative should be defined to optimize its performance; moreover, the policy (fares, parking fees, etc.) and land use setting in which the alternatives are defined and analyzed must be unbiased and consistent across the alternatives. The intent is to ensure that any differences in the costs and benefits between alternatives are attributable to the alternatives themselves and not to the underlying policy and land use assumptions (although supplemental sensitivity analyses may also be included in the study, if desired, to explore the implications of different service, fare, and/or land use policies).

In addition to defining a number of appropriate Build Alternatives, the study sponsor must also identify a No-build Alternative and at least one Transportation System Management (TSM) Alternative. The No-build Alternative is a requirement of NEPA regulations and serves as the baseline for establishing the environmental impacts of the alternatives, the financial condition of implementing and operating agencies, and the cost-effectiveness of the TSM Alternative (typically required for the selection of a New Starts Baseline Alternative, as discussed in Appendix A). Typically, the No-build Alternative can be defined in one of two ways:

1. An alternative that incorporates "planned" improvements that are included in the fiscally constrained long-range plan for which need, commitment, financing, and public and political support are identified and are reasonably expected to be implemented.
2. A conservative definition that adds only "committed" improvements – typically those in the annual element of the transportation improvement program or local capital programs – together with minor transit service expansions and/or adjustments that reflect a continuation of existing service policies into newly developed areas.

The TSM Alternative must be defined as the "best that can be done" to address the identified problems in the corridor without constructing a new transit guideway. While lower in cost than the Build Alternatives, the TSM Alternative may still carry some significant costs, particularly when the transportation problems in the corridor are complex and the associated build options are extremely capital intensive. The TSM Alternative may include transportation system upgrades such as intersection improvements, minor road widening, traffic engineering actions, bus route restructuring, shortened bus headways, expanded use of articulated buses, reserved bus lanes, contra-flow lanes for buses and High Occupancy Vehicles (HOVs) on freeways, special bus ramps on freeways, expanded park/ride facilities, express and limited-stop service, signalization improvements, signal pre-emption, passenger information systems, and timed-transfer operations. The key factor in defining the TSM is that it must serve the same travel markets and provide as close a level of service as the Build Alternatives under study, absent a corresponding level of capital investment.

In most cases, the TSM Alternative will be used as the Baseline Alternative for determining the incremental costs and benefits of candidate New Starts projects. Additional guidance on the selection of the New Starts Baseline Alternative is provided in Appendix A of this guidance.

#### **I.I.IV Analytical Assumptions, Methodologies, and Results**

As previously noted, the alternatives analysis study encompasses a number of technical analyses addressing travel demand impacts, environmental impacts (air quality, noise, and natural resources, etc.), social impacts (neighborhood, cultural/historical, environmental justice, etc.), land use, economics, capital and O&M costs, and several others, depending on the nature of the corridor and the purpose and need. For transportation improvements in the corridor. These analyses, in turn, are dependent upon a broad data collection effort, the identification of policy input variables (land use, transit service policies, fare policies), and the application of a wide array of technical planning tools (geographic information systems; travel demand, financial, and other forecasting models; operations simulation software, etc.). Such analyses result in the generation of measurable outputs relating to a number of different attributes (costs, travel characteristics, community impacts) which allow stakeholders to understand the incremental costs and benefits between the transportation alternatives being studied, and provide decisionmakers with the information necessary to select a preferred alternative for further engineering and design.

FTA's *Procedures and Technical Methods for Transit Project Planning* summarizes the technical underpinnings of, and considerations for, a number of important analyses. These analyses require the use of consistent and reasonable measures, data inputs, and analytical assumptions

in order to provide un-biased information on the costs, benefits, and impacts of studied alternatives. The definition of input variables will have significant effects on the ultimate outcome of the forecasting procedures used to predict future impacts; such information must be carefully selected and documented, so that study stakeholders may understand the cause of the effect (results). As noted previously, policy and land use assumptions should be held constant across alternatives to ensure that it is the benefits of the alternatives themselves that are captured in the analyses. Similarly, modal bias constants and coefficients used to model future travel behavior must be reasonably estimated to ensure the integrity of the forecast results. In its [Reporting Instructions for the Section 5309 New Starts Criteria](#), FTA has identified a number of specific technical principles and assumptions which every alternatives analysis must follow; moreover, FTA requires that the Chief Executive Officer of the local sponsoring agency certify that these principles have been adhered to in the planning and development of the project and the calculation of its New Starts criteria. Figure II on the following page presents this *Certification of Technical Assumptions* statement.

**Figure II Certification of Technical Assumptions**

<b>LEAD AGENCY CERTIFICATION OF TECHNICAL ASSUMPTIONS IN THE DEVELOPMENT OF THE NEW STARTS CRITERIA SUBMISSION</b>	
<p>The <u>(Name of Submitting Agency)</u>, acting in the capacity as lead agency for <u>(Project Name)</u>, the proposed New Starts project, understands that the Section 5309 New Starts criteria are used to evaluate the worthiness of proposed projects across the nation and that it is important that project sponsors address the criteria in a consistent manner. As Chief Executive Officer of <u>(Name of Submitting Agency)</u> I hereby certify that <u>(Name of Submitting Agency)</u> has followed FTA's Reporting Instructions on Section 5309 New Starts Criteria in the preparation of this submission, including:</p> <ul style="list-style-type: none"> <li>• Assuming identical highway and transit networks outside the corridor for the Baseline and the Build alternatives for the travel demand forecasts;</li> <li>• Defining the build alternative as the project for which we are seeking FTA New Starts funding ;</li> <li>• Developing ridership forecasts for the New Starts project that are based on the same set of growth forecasts and land use assumptions that are used to estimate ridership for the Baseline alternative;</li> <li>• Allocating the population and employment growth on the basis of locally adopted land use plans;</li> <li>• Analyzing the Build and Baseline Alternatives within the same basic policy setting, i.e., the model assumptions, parameters, and inputs are the same for all alternatives except for changes in the transportation network or other data that are directly attributable to each alternative.</li> <li>• Reporting the New Starts criteria and specific measures only for the Section 5309 New Starts transit investment and not for the complete build alternative.</li> </ul> <p>Any methods and assumptions that differ from those described in this section have been discussed with and concurred in by FTA.</p>	
_____	_____
Chief Executive Officer	Date



FTA treats this certification, and the principles it conveys, very seriously. More specifically, FTA will not evaluate candidate New Starts projects for the purposes of advancing them into PE (or final design) unless the sponsoring agency's CEO signs this statement, and FTA's review of the technical study elements (as outlined in this guidance) finds substantive compliance with the it's abiding planning principles.

The documentation of assumptions, methodologies, and results of these analyses is a critical component of any planning study. In alternatives analysis, documentation of these study elements takes on increased importance in that they form the basis of identifying, isolating, and understanding the tangible differences between proposed solutions to a given corridor purpose and need. The identification and documentation of study assumptions is a key early milestone in the corridor analysis, as it feeds the analytical processes used to generate desired information. Meanwhile, the documentation and disclosure of these assumptions provides a mechanism for study staff and stakeholders to better understand the results of the analytical process, and to defend them to project reviewers and critics.

Documentation of assumptions and results helps meet other objectives as well. FTA has long believed that a comparison of planning-level *forecasts* of project scope, cost, and performance with the *actual* scope, cost, and performance of implemented New Starts investments would provide the transit and transportation planning communities with a better understanding of the impacts of major transit capital investments and the analytical methods and procedures used to generate the information needed to support local decisionmaking. This enhanced understanding would, in turn, help identify needed improvements to related tools and techniques for corridor planning. The *Final Rule on Major Capital Investment Projects* includes a provision whereby New Starts project sponsors seeking an FFGA must submit a complete plan for collection and analysis of information to identify the impacts of their projects and the accuracy of the forecasts that were prepared during project development. During final design, projects seeking FFGAs will be required to submit to FTA a plan for data collection and analysis. If the project results in an executed FFGA, this plan must be implemented, resulting in the conduct and completion of a Before and After Study.

FTA is currently developing guidance (anticipated to be available in early 2003) on the scope of data collection and analytical activities in support of the Before and After study requirement. In summary, local project sponsors must assemble information on five project characteristics:

1. *Project Scope* – the physical components of the project, including environmental mitigation;
2. *Service Levels* – the operating characteristics of the guideway, feeder bus services, and other transit services in the corridor;
3. *Capital Costs* – total costs of construction, vehicles, engineering, management, testing, and other capital expenses;
4. *Operation and Maintenance Costs* – incremental operating/maintenance costs of the project and the transit system; and,
5. *Ridership Patterns* - origin/destination patterns of transit riders on the project and in the corridor, and farebox revenues for the transit system.

Although a formal plan for the Before and After Study is not required until final design (and only then for projects seeking a FFGA), candidate New Starts project sponsors must be aware that the "before" element of the study relating to predicted project impacts requires that assumptions and resulting information for each of the five characteristics described above must be documented at the conclusion of alternatives analysis (and later, at the conclusion of preliminary engineering).

FTA emphasizes that project sponsors have wide discretion in the documentation of analytical assumptions and methodologies so long as they capture the information necessary to understand the technical underpinnings of the study results. FTA is interested in reviewing the technical documentation of every AA that may result in local selection and implementation of a major transit capital investment project. Of particular interest to FTA is the technical information that supports the travel demand analysis of the proposed alternatives and the development of the New Starts project justification criteria, including the new transportation system user benefits measure. FTA therefore encourages the submission of forecasting assumptions and draft forecast results related to the criteria (and other common travel demand data) as early in the study as possible so that any questions, issues, and concerns can be expeditiously addressed within alternatives analysis, rather than when a request to begin preliminary engineering is submitted. This information must clearly identify and explain the use of any practices or methods that are inconsistent with the FTA principles and assumptions outlined in this (and other) FTA guidance.

Finally, FTA requests project sponsors to submit documentation of the various technical methodologies (often called methodology reports, and typically addressing analyses such as travel demand forecasting, air quality modeling, the development of O&M costs, etc.) used to support the alternatives analysis study. As above, no specific format for this information is required; rather, the documentation submitted to FTA should not exceed the level of documentation produced to meet the needs of the local study sponsor and other stakeholders.

#### **I.I.V Preliminary Financial Plans**

A solid financial plan facilitates the selection and implementation of new services and capital improvements and the ongoing operation and maintenance of the transit system. The financial plan presents the recent financial history of the transit agency, describes its current financial health, documents projected costs and revenues into the future, and demonstrates the reasonableness of key assumptions underlying these projections. Ultimately, the financial plan developed during alternatives analysis helps decisionmakers understand the costs of not only constructing each alternative, but of operating and maintaining them on an annual basis and their relative impact on the operating agency's ability to continue to provide its existing (and other planned) transit services.

Financial planning for major transit investment projects recognizes two key principles. First, the general content of the financial plan remains the same throughout the planning and project development process. Basic information on the financial health of an agency, and the financial feasibility of specific projects, is established through the analysis of current and forecast costs, revenues, funding sources, and financing mechanisms. Second, the details of the financial information will continually be refined as projects advance through planning and development. Project cost estimates become more reliable as the project scope is defined in greater detail and funding strategies become more certain as funds are committed to the project. Consistent with the other technical components of the project development process, the level of the financial analysis increases as the study moves from a relatively broad comparison of alternatives (as in alternatives analysis) to engineering, design, and mitigation for a specific LPA.

The preliminary financial plans developed during alternatives analysis will include a review of the capacity of existing funding sources to support the capital and operating costs of the alternatives. It may also include the exploration of new funding sources, such as dedicated transit tax revenues and bonding, as well as innovative financing techniques such as toll revenue credits and cross-border leasing.

The primary product of a financial plan at the alternatives analysis stage of development is an agency-wide 20-year cash flow projection that includes the capital and operating plans for the

agency as a whole and for any proposed alternatives. The remaining content of a financial plan is the information to support all the assumptions and inputs that contribute to the cash flow projection and the financial analysis of agencies assumptions, capital and operating plans and financial strategies.

FTA evaluates the financial plan of New Starts projects as part of its decision to approve their advancement into preliminary engineering. FTA looks at the financial health of the transit agency and funding partners, the reliability of proposed funding sources, and the reasonableness of assumptions relating to revenue growth rates, project capital and operating cost estimates, and future systemwide (rail and bus) service levels and costs. Additional guidance on the development of financial plans is contained in [FTA's Guidance on Transit Financial Plans and Procedures and Technical Methods for Transit Project Planning](#).

### **I.I.VI Evaluation of Alternatives**

An evaluation of the alternatives is the penultimate activity in the study process, and should provide the information necessary for local officials and the general public to understand the relative costs and benefits among alternatives and to select a locally preferred alternative to advance into further detailed analysis. The evaluation of alternatives brings together all of the preceding analysis – transportation, environmental, land use, financial, etc. – and presents them such that decisionmakers can see the trade-offs between alternatives and make an informed judgment about which alternative best address the corridor's purpose and need *and* has the most likelihood of generating the political and financial support necessary to be implemented.

The evaluation framework must be focused on the transportation problems identified in the project's purpose and need, and should reflect the corresponding project goals and objectives that drive the alternatives analysis. Typically, evaluation measures are selected to assess how well (or poorly) each alternative meets these goals and objectives. Common categories of goals, objectives, and (therefore) measures include

1. *Effectiveness* - the extent to which alternatives solve the stated transportation problems in the corridor;
2. *Impacts* - the extent to which the alternatives impact --- positively or negatively - nearby natural resources and neighborhoods, air quality, the adjacent transportation network and facilities, land use, the local economy, etc.;
3. *Cost effectiveness* – the extent to which the costs of the alternatives are commensurate with their benefits;
4. *Financial feasibility* – the extent that funds required to build and operate the alternatives are likely to be available;
5. *Equity* – that is, the costs and benefits of the alternatives are distributed fairly across different population groups.

While the evaluation of alternatives occurs near the end of the alternatives analysis, the development of an evaluation methodology and the identification of supporting measures should be a high priority item in the early stages of the study; this ensures that the analytical process produces the information necessary to "feed" the measures. The measures should be comprehensive in that they address all of the stated goals and objectives, but should be structured to avoid redundant presentation of the same benefits. To the extent possible, the measures should quantify impacts rather than express subjective judgments on the nature of the impact; they should further provide an appropriate perspective on the magnitude of the impacts. For example, the relocation of one million square feet of new office space to proposed station areas may appear significant when presented by itself, but is probably more meaningful when also expressed as a percentage of total development in the corridor.

It is important to emphasize that the evaluation of alternatives is focused on local decisionmaking. Thus, while the New Starts project justification and local financial commitment criteria described later in this guidance include a number of measures which FTA uses to evaluate the relative merits of candidate projects competing for New Starts funding, they may not reflect a set of ideal measures for use in local decisionmaking. Project staff and stakeholders are free to select their own evaluation measures (which may or may not include the New Starts criteria), so long as they support the need for decisionmakers and the general public to understand the relative costs and benefits among alternatives.

#### **I.I.VII Development of FTA Measures of Project Justification and Local Financial Commitment (New Starts Criteria)**

Sponsors of New Starts projects develop information on project justification and local financial commitment as part of the transportation, air quality, land use, and financial elements of the alternatives analysis. This information is subsequently submitted to FTA with the formal request to enter into preliminary engineering. Additional information on FTA's measures to support the statutory New Starts criteria for project justification and local financial commitment is provided in Sections II.II and II.III of this guidance. Detailed guidance on the development of these measures is contained in FTA's *Reporting Instructions for the Section 5309 New Starts Criteria*.

#### **I.I.VIII Other Activities**

Alternatives analysis is considered completed when the alternative selected for advancement through project development is formally adopted by the metropolitan planning organization (MPO) into the region's financially constrained long-range transportation plan. This action confirms local consensus to implement the project, and that adequate regional funding capacity exists for its construction and operation through the life of the plan (typically 20-25 years). In areas in nonattainment of national ambient air quality standards, project adoption in the constrained long range plan ensures that its implementation will be part of a regional program of transportation improvements, policies, and other measures to achieve future conformity with the air standards.

Although alternatives analysis is a planning activity, it is important that issues related to the management and undertaking of subsequent engineering and design work are understood and considered before advancing a project into further development. Therefore, FTA stresses that candidate New Starts project sponsors will need to demonstrate the technical capability and capacity to carry out the preliminary engineering effort prior to submitting a formal request for entrance into PE. Consequently, project sponsors should be encouraged to begin development of a project management strategy during alternatives analysis.

This strategy is typically documented by a project management plan (PMP). The PMP is a dynamic management tool which is intended to describe how subsequent phases of project development --- preliminary engineering, final design, construction, and start-up --- will be managed by the lead local agency, in accordance with FTA's *Final Rule on Project Management Oversight (49 CFR 633) Project Management Oversight Program Operating Guidance*. FTA acknowledges that not all elements of the PMP can be comprehensively addressed at the pre-PE stage of development. By the completion of alternatives analysis, however, the PMP should, at a minimum, focus on how the next stage --- preliminary engineering --- of project development will be managed, and address the other required elements in a general way, commensurate with the stage of development. Similarly, FTA's expectations for, and review of, the PMP prior to advancing into PE will be commensurate with the project's very early stage of development.

The PMP will guide the subsequent PE and final design effort, and will become increasingly detailed as the project develops. More information on the project management plan is provided in Section I.III.IV of this guidance.

***I.II Request to Enter Preliminary Engineering***

Consistency with the planning and project management principles described briefly in this guidance (and more thoroughly in FTA's *Procedures and Technical Methods for Transit Project Planning and Project Management Oversight Program Operating Guidance*) and compliance with each of its specified activities, milestones, and approvals is necessary before FTA can consider a local project sponsor's request to advance a selected fixed guideway transit project into the preliminary engineering stage of project development. Table I below re-summarizes each of the items described in Section I.I of this guidance which must be met in advance of FTA's consideration of a request to enter PE.

**Table I**

**Preliminary Engineering Required Milestones**

<b>Conduct of Alternatives Analysis</b>	
<i>FTA Review of Documentation</i>	<ul style="list-style-type: none"> <li>• Scope of Work</li> <li>• Problem Statement, Goals, and Objectives</li> <li>• Definition of Alternatives</li> <li>• Documentation of Study Assumptions, Results, and Methodologies</li> </ul>
<i>FTA Action</i>	<ul style="list-style-type: none"> <li>• Selection of New Starts Baseline Alternative</li> </ul>
<i>Local Action</i>	<ul style="list-style-type: none"> <li>• LPA from AA adopted in region's financially constrained long range plan</li> </ul>
<b>Demonstration of Technical Capability to undertake Preliminary Engineering</b>	
<i>FTA Action</i>	<ul style="list-style-type: none"> <li>• Acceptance of PMP</li> </ul>

A formal request to enter preliminary engineering is submitted by the New Starts project sponsor to its FTA Regional Office. The request must provide evidence that each of the milestones

described above have been achieved. The request must also include the full range of New Starts criteria for project justification and local financial commitment. FTA's *Final Rule on Major Capital Investment Projects* requires FTA to issue its decision on a request to enter into PE within 30 days of a formal submission of such a request. However, FTA does not consider a request to be formal until each of the requirements described above have been satisfied. Therefore, it is extremely important that candidate New Starts project sponsors work closely with their FTA Regional Office in order to ensure that all required information is submitted in a manner which does not cause delay in the processing of the PE request. The FTA Regional Office will notify the project sponsor by letter or email when FTA has "accepted" that all required milestones have been met and when the formal 30-day evaluation and approval period commences.

The FTA Regional Office will coordinate with the FTA Office of Planning on the evaluation of the New Starts project justification and local financial commitment criteria. Project reviews and evaluations that result in an overall project rating of *Recommended* or *Highly Recommended* may be approved for entrance into preliminary engineering. Projects that are rated *Not Recommended* against the New Starts criteria may not be approved. The FTA Regional Administrator will respond to the project sponsor via letter the results of this review - and the ultimate approval/disapproval decision - within 30 days of the acceptance of the PE request. For projects that are approved, the letter will confirm pre-award authority for all preliminary engineering activities and will identify any conditions of the approval. Such conditions will generally reflect specific areas of transportation, environmental, or financial analysis, or project management requirements, which FTA may have concerns with and which the project sponsor must address during the PE effort.

FTA notes that its evaluation of a project's land use and local financial commitment will be commensurate with the stage of its development. That is, while the measures that make up these criteria are constant throughout project development, the standard by which ratings are assigned differs. This is because while the development of land use policies and tools should take place as early in the planning process as possible, these policies and tools would be expected to become more concrete and fully developed as a project advances through project development. Similarly, as a project proceeds through the project development process, its cost estimates and local funding commitments will become much more solid. Additional information on these criteria and FTA's evaluation of them are addressed in sections II.II and II.III of this guidance and in Appendix B, *New Starts Evaluation and Rating Process*.

### ***I.III Preliminary Engineering***

During the preliminary engineering phase of project development, local project sponsors refine the design of the locally preferred alternative to the extent necessary to complete the NEPA process, taking into consideration all reasonable design options. Preliminary engineering results in estimates of project costs, benefits, and impacts for which there is a much higher degree of confidence. The proposed project's New Starts criteria are similarly refined in the preliminary engineering phase of development. In addition, project management plans should be finalized, products of the PE effort that demonstrate the technical capability of the project sponsor to advance further in development should be substantially completed, and local funding sources committed to the project (if not previously committed).

Preliminary engineering for a major capital investment project is considered complete when FTA declares in the environmental Record of Decision (ROD) or Finding of No Significant Impact (FONSI) that the NEPA process has been completed, and when the project sponsor has adequately demonstrated to FTA its capability to implement and operate the proposed investment. The following briefly summarizes key elements of the preliminary engineering phase of development.

### **I.III.I Environmental Review**

As noted, preliminary engineering includes completion of the NEPA process. Most New Starts projects involve significant environmental and community impacts and therefore require an Environmental Impact Statement (EIS). Where the alternatives analysis study is undertaken concurrently with a traditional Draft EIS, preliminary engineering is limited to the conduct and completion of the Final EIS on the locally preferred alternative. Where an alternatives analysis is completed prior to initiation of the NEPA process, preliminary engineering would encompass both the Draft and Final Environmental Impact Statements. In this scenario, FTA's PE approval would be for the preferred alternative (and any design options) selected from the alternatives analysis and advanced into the NEPA process. Conduct of an alternatives analysis prior to initiating the NEPA process must provide for substantive public involvement and adhere to the guiding principles identified in this guidance in order for its results (including the dismissal of other alternative strategies to meet corridor purpose and need) to be carried forward into the EIS.

In the case of a "tiered" EIS, the "Tier 1" analysis and review generally satisfies AA while the PE effort would be undertaken in subsequent tiers.

In all cases, the Final EIS addresses comments and questions generated from the public review of the Draft EIS, and focuses on the avoidance and mitigation of impacts. Mitigation decisions often require substantive collaboration with local, state, and Federal resource agencies, and may require significant additional analysis and refinement of the LPA's design concept in order to adequately mitigate identified environmental, socioeconomic, and transportation impacts. FTA requires that local project sponsors provide firm commitments to implementing the required mitigation measures specified in a Final EIS before issuance of an environmental ROD.

The refinement of project costs, benefits, and impacts is further undertaken as part of the environmental review process, and is discussed below.

### **I.III.II Refinement of Costs, Benefits, and Impacts**

Preliminary engineering results in a level of design that permits the identification, with a high degree of confidence, of the full costs, benefits, and impacts of the locally preferred alternative. In contrast to alternatives analysis, which involved an evaluation of multiple alternatives at a relatively broad level of detail, preliminary engineering requires a higher degree of detailed analysis on a single alternative. The differences in approaches between the two phases of development reflect the nature of the decision at-hand, with alternatives analysis providing decisionmakers with adequate information to distinguish between the costs and benefits of "competing" solutions to locally-identified transportation problems, and preliminary engineering generating more detailed analysis of how to implement the preferred solution, to mitigate undesirable impacts, and to estimate capital costs at a much higher level of detail than necessary in earlier planning.

Throughout preliminary engineering, capital cost estimates and schedules are presented in increasingly detailed unit cost breakdowns for the proposed project. Confidence in cost estimates increases as the project scope and precise alignment are finalized, environmental mitigation activities and other cost escalation risk areas are more accurately specified, and changes to the original design and cost estimates become apparent. The project construction (and subsequent operation) schedule is further defined, permitting a more accurate escalation of costs to their year-of-expenditure.

In addition to capital costing, preliminary engineering provides an opportunity for more detailed planning and analysis. This is true, for example, for feeder bus planning, which may have been equilibrated across several alternatives during alternatives analysis, but which now should be re-optimized for the LPA. Furthermore, enhanced design of transit stations included in the LPA may require some modifications to feeder bus plans in terms of how buses access the facility, and how many can be accommodated at any single moment (thus requiring an adjustment to bus volumes and/or frequencies). More sophisticated traffic impact analyses may also be necessary during preliminary engineering in order to more accurately design necessary traffic mitigation measures.

Where more recent land use forecasts become available or policy variables change since completion of alternatives analysis, revised travel demand forecasts should be undertaken. Since such forecasts are used in traffic, air, and noise analysis, as well as the design of passenger facilities, the preliminary engineering effort may require significant "planning" resources.

### **I.III.III Financial Plan**

Financial planning activities during preliminary engineering build upon the preliminary exploration of funding strategies undertaken in previous planning work. As project costs are refined, the financial analysis focuses on the evaluation of proposed funding sources, increasingly detailed revenue forecasting, and the securing of local funding commitments. Evidence of local financial commitment to the project may include legislative documentation, resolutions approving funding, account balances, a bonding prospectus and agency debt covenants, signed joint development agreements, or legally binding agreements with state and/or local agencies committing funds. By the end of preliminary engineering, virtually all non-Federal funding sources should be committed to the project.

Project operating costs and revenues are similarly subject to further detailed analysis and refinement throughout the PE effort. Ultimately, the 20-year systemwide cash flow which emerges from preliminary engineering should provide strong evidence of the sponsoring agency's ability to construct and operate the fixed guideway investment, as well as its capacity to continue to operate and maintain existing transit services and any other planned improvements to the regional transit system. FTA evaluates this financial plan as part of its decision to approve a project's advancement into the final design stage of development (see Section I.IV below and Section II.II later in this guidance).

### **I.III.IV Project Management**

The preliminary engineering effort is guided by the project management plan (PMP) first identified in Section I.I.VIII. A transit capital investment project's PMP establishes the approach, policies, and procedures for undertaking PE. Activities and functions covered under the PMP include the identification of the roles and responsibilities of key participants in the engineering effort; quality control and assurance; design management; real estate and other property acquisition; risk management; safety and security; construction and procurement management; testing and preparation for revenue start-up; human resources, labor relations, and dispute resolution; and legal requirements, assurances, and agreements. As noted previously, the PMP is a dynamic document which is continually updated to reflect the current stage of project development, the status of project budget and schedule, and the increasing sophistication of the parameters being applied to project design (and, ultimately, construction).

FTA typically assigns project management oversight (PMO) contractors to projects undergoing PE to ensure that the engineering effort progresses in accordance with FTA requirements, and that the project sponsor is adequately preparing for the final design stage of development.



Additional information on FTA’s expectations for the management of preliminary engineering (and subsequent project development) is provided in FTA’s *Final Rule on Project Management Oversight (49 CFR 633)*; *Project Management Oversight Program Operating Guidance*; and course materials for the National Transit Institute’s *Management of Transit Construction Project Seminar*.

*The Office of Program Management is developing additional guidance on preliminary engineering principles and products, including the identification of the specific milestones that must be met prior to advancing a New Starts project into final design. These milestones include (but are not limited to) the development of a vehicle fleet management plan, which documents the project’s vehicle specifications, procurement process, and approach for their integration within the larger transit system, and real estate and acquisition plans which address a myriad of right-of-way and related appraisal and relocation assistance issues. This information will be incorporated in future versions of this guidance.*

### **I.III.V Value Engineering**

Value engineering (VE) is a systematic evaluation of a project design to obtain the most value for every dollar of cost. By carefully investigating costs, availability of materials, construction methods, shipping costs and physical limitations, planning and organizing, cost/benefit values, and similar cost influencing items, an improvement in the overall cost of a project can be realized. The entire VE effort is aimed at identifying these cost savings, and at eliminating (or modifying) of anything that adds to the project cost without adding to its functional capabilities.

*The Office of Program Management is developing additional guidance on value engineering, and FTA’s expectations for an appropriate level of VE at the preliminary engineering stage of project development. This information will be incorporated into future versions of this guidance.*

### **I.IV Request to Enter Final Design**

Project sponsors which have completed preliminary engineering and which have provided evidence of their technical capability to advance into final design must request FTA approval to enter the final design stage of project development. Like the approval to enter into PE, FTA’s approval to enter final design is based upon the achievement of planning, environmental, and project management milestones, and a review and evaluation of the project’s New Starts criteria. Consequently, the request should include evidence that the requirements discussed above (and resummairized in Table III on the following page) have been satisfied, as well as updated project justification and local financial commitment criteria.

*The Office of Program Management is developing additional guidance on preliminary engineering principles and products, including the identification of the specific milestones that must be met prior to advancing a New Starts project into final design. This information will be incorporated in future versions of this guidance.*

**Table II  
Final Design Required Milestones**

<b>Completion of Preliminary Engineering</b>	
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<i>FTA Action</i>	<ul style="list-style-type: none"> <li>• Issuance of ROD/FONSI</li> </ul>
<b>Demonstration of Technical Capability to undertake Final Design</b>	
<i>FTA Action</i>	<ul style="list-style-type: none"> <li>• Acceptance of Updated PMP</li> </ul>
	<ul style="list-style-type: none"> <li>• Acceptance of Fleet Management Plan</li> </ul>
	<ul style="list-style-type: none"> <li>• Acceptance of Real Estate and Acquisition Plan</li> </ul>

The request to enter into Final Design is submitted to the FTA Regional Office, which coordinates with the FTA Offices of Program Management and Planning on the final review of materials supporting the request. In order to ensure an expeditious processing of the final design request, these materials should have already been substantively reviewed and generally accepted as part of FTA’s ongoing dialogue with, and project management oversight of, the project sponsor. Once FTA has found that the milestones presented in Table II have been satisfied, it will notify the sponsor that the proposed project meets the threshold for being considered to advance into final design, and the evaluation of the project’s New Starts criteria will commence. Like the PE approval process, project reviews and evaluations that result in an overall project rating of *Recommended* or *Highly Recommended* may be approved for entrance into final design. Projects that are rated *Not Recommended* against the New Starts criteria may not be approved.

The *Final Rule on Major Capital Investment Projects* requires that FTA complete its formal review of the New Starts criteria and make its decision to approve or disapprove the final design request within 120 days of submission.

### ***I.V Final Design***

*Final design* is the last phase of project development, and includes right-of-way acquisition, utility relocation, and the preparation of final construction plans (including construction management plans), detailed specifications, construction cost estimates, and bid documents. The project’s financial plan is finalized, and a plan for the collection and analysis of data needed to undertake a Before and After Study (which is required of all projects seeking an FFGA) is developed.

*The Office of Program Management is preparing guidance on FTA’s expectations for grantee conduct of final design. This information will be included in future versions of this guidance.*

#### **I.V.I Before and After Study Plan**

As noted previously, FTA's *Final Rule on Major Capital Investment Projects* requires that project sponsors seeking Full Funding Grant Agreements submit a complete plan for the collection and analysis of information to identify the impacts of their projects and the accuracy of their forecasts. This requirement originates with the Government Performance and Results Act (GPRA), and reflects FTA's desire to a) develop a greater understanding of the actualized benefits of New Starts projects, once implemented and in operation and b) the degree to which forecasts prepared as part of project planning and development are realized, and the reasons why.

FTA requires the development of a plan that outlines data collection and analysis activities in support of the study during the final design stage of development. This Before and After Study Plan should cover the collection of information on the five characteristics of the project and its associated transit services described in Section I.I.IV (project scope, transit service levels, capital costs, O&M costs, and ridership patterns). The Plan should further address how the data measuring the effects of the New Start project will be collected and how the subsequent analysis of travel patterns and costs "before" and "after" implementation and operation of the project will be undertaken. Ultimately, the Before and After Study Plan should provide a framework which permits the project sponsor to:

- collect information on existing and future transit services and travel characteristics in a manner which ensures comparability;
- perform the analysis of before and after data to discern the effects of the project on the sponsor's costs, overall transit services, and ridership;
- assess the consistency between predicted project characteristics and performance and its actual characteristics and performance; and
- identify the reasons for any disparity (should any exist) between predicted and actual outcomes.

FTA approves the Before and After Study Plan prior to execution of the Full Funding Grant Agreement (FFGA). Costs of data collection and analyses associated with the Before and After Study shall be treated as a project cost.

The FTA Office of Planning shall provide technical assistance to New Starts project sponsors in the development of the Before and After Study Plan as well as the conduct of each Study. Additional guidance on the Before and After Study is anticipated to be available in early 2003.

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<sup>2</sup>Throughout this document, the word "corridor" means a geographic area that encompasses the origins, destinations, and primary paths of the majority of trips affected by the identified transportation problem or need. "Corridor" in this sense does not mean a specific transportation facility right-of-way, as it may in other contexts.