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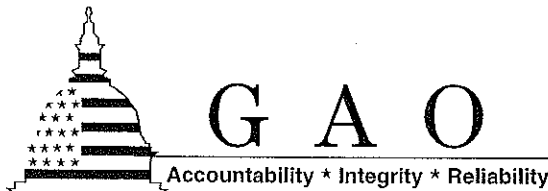
GAO

Report to Congressional Committees

July 2008

PUBLIC TRANSPORTATION

Improvements Are Needed to More Fully Assess Predicted Impacts of New Starts Projects





Highlights of GAO-08-844, a report to congressional committees

PUBLIC TRANSPORTATION

Improvements Are Needed to More Fully Assess Predicted Impacts of New Starts Projects

Why GAO Did This Study

Through the New Starts program, the Federal Transit Administration (FTA) evaluates and recommends new fixed guideway transit projects for funding using the evaluation criteria identified in law. In August 2007, FTA issued a Notice of Proposed Rulemaking (NPRM), in part, to incorporate certain provisions within the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU) into the evaluation process. SAFETEA-LU requires GAO to annually review FTA's New Starts process. This report discusses (1) the information captured by New Starts project justification criteria, (2) challenges FTA faces as it works to improve the New Starts program, and (3) options for evaluating New Starts projects. To address these objectives, GAO reviewed statutes, FTA guidance and regulations governing the New Starts program, and interviewed experts, project sponsors, and Department of Transportation (DOT) officials.

What GAO Recommends

GAO recommends that the Secretary of Transportation take steps to improve the New Starts evaluation process, including seeking additional resources to improve local travel models and seeking a legislative change to allow FTA to consider the dollar value of mobility improvements in evaluating projects.

DOT officials generally agreed with the findings and recommendations in this report.

To view the full product, including the scope and methodology, click on GAO-08-844. For more information, contact Katherine Siggerud at (202) 512-2834 or siggeurdk@gao.gov.

What GAO Found

FTA primarily uses cost-effectiveness and land use criteria to evaluate New Starts projects, but concerns have been raised about the extent to which the measures for these criteria capture total project benefits. FTA's current transportation system user benefits measure, which assesses a project's cost effectiveness, focuses on how proposed projects will improve mobility by reducing the real and perceived cost of travel. FTA told GAO that such mobility improvements are a critical goal of all transit projects. While the literature and most experts that GAO consulted with generally agree with this assertion, they also raised concerns that certain benefits are not captured. As a result, FTA may be underestimating transit projects' total benefits, but it is unclear the extent to which this impacts FTA's evaluation and rating process. FTA officials acknowledged many of these limitations but noted that resolving these issues would be difficult without a substantial investment of resources by all levels of government to improve and update local travel models.

FTA faces several systemic challenges to improving the New Starts program, including addressing multiple program goals, limitations in local travel models, the need to maintain the rigor while minimizing the complexity of the evaluation process, and developing clear and consistent guidance for incorporating qualitative information. The evaluation criteria identified in the law reflect multiple goals for the program, which has led to varying expectations between FTA and project sponsors about what types of projects should be funded. Also, models that generate local travel demand forecasts are limited and may not provide all of the information needed to properly evaluate transit projects. FTA has taken steps to mitigate the modeling limitations, such as incorporating proxy measures to account for certain project impacts and developing a request for proposals to improve local travel models so that they can better predict changes in highway user benefits. However, according to FTA officials, the request for proposals is only a first step in improving local travel models, and additional resources are needed.

Experts and project sponsors GAO interviewed discussed different options for evaluating proposed transit projects but identified significant limitations of each option. One option is to revise the current New Starts evaluation process as proposed by FTA in the August 2007 NPRM. While some experts GAO spoke to appreciated the rigor of the current evaluation process, others noted that the NPRM may still underestimate total project benefits. For example, FTA's measure of mobility improvements does not account for benefits accruing to highway users, and its measures of environmental benefits may not properly distinguish among projects. Experts also discussed other options for evaluating proposed transit projects, including benefit-cost analysis. Unlike FTA's current evaluation process, benefit-cost analysis would attempt to monetize all benefits and costs, which experts told GAO would be a more comprehensive approach to evaluating projects. FTA is currently prohibited by statute from considering the dollar value of mobility improvements in evaluating projects.

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Abbreviations

ANPRM	Advanced Notice of Proposed Rulemaking
BRT	Bus Rapid Transit
DOT	Department of Transportation
EPA	Environmental Protection Agency
FFGA	full funding grant agreement
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
LRT	Light Rail Transit
MPO	metropolitan planning organization
NPRM	Notice of Proposed Rulemaking
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
TRB	Transportation Research Board
TSUB	transportation system user benefits

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G A O

Accountability * Integrity * Reliability

United States Government Accountability Office
Washington, DC 20548

July 25, 2008

The Honorable Christopher J. Dodd
Chairman
The Honorable Richard C. Shelby
Ranking Member
Committee on Banking, Housing, and Urban Affairs
United States Senate

The Honorable James L. Oberstar
Chairman
The Honorable John L. Mica
Ranking Republican Member
Committee on Transportation and Infrastructure
House of Representatives

Since the early 1970s, a significant portion of the federal government's share of new capital investment in mass transportation has come through the Federal Transit Administration's (FTA) New Starts program. Through this program, FTA identifies and recommends new fixed-guideway transit projects for grants, typically through full funding grant agreements (FFGA).¹ Over the last decade, the New Starts program has provided state and local agencies with over \$10 billion to help design and construct transit projects throughout the country.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) authorized the New Starts program through fiscal year 2009. Although SAFETEA-LU maintained a number of program requirements imposed by previous authorizing legislation, it also

¹Fixed guideway systems use and occupy a separate right-of-way for the exclusive use of public transportation services. These fixed guideway systems include fixed rail, exclusive lanes for buses and other high-occupancy vehicles, and other systems. An FFGA establishes the terms and conditions for federal funds available for the project, including the maximum amount of federal funds available.

made some changes to the program.² For example, FTA must continue to prioritize projects for funding by evaluating, rating, and recommending potential projects on the basis of specific local financial commitment and project justification criteria, including cost-effectiveness, operating efficiencies, land use, mobility improvements, and environmental benefits. SAFETEA-LU, however, also added economic development as a project justification criterion.

We have previously identified FTA's use of a rigorous and systematic evaluation process to distinguish among proposed New Starts investments as a model for other transportation programs.³ However, we and others have also identified challenges facing the New Starts program. For example, our past reviews found that many program stakeholders thought that FTA's process for evaluating New Starts projects was too complex and costly and did not effectively use all of the criteria outlined in SAFETEA-LU and previous legislation to account for different project benefits, such as economic development. This latter issue is of particular concern, given that FTA's evaluation process is intended to provide a meaningful and transparent approach for distinguishing between proposed projects by assessing a range of project benefits. As a result, by not measuring or underestimating certain benefits, the relative rankings of proposed projects could change and subsequently impact FTA's funding recommendations.

In August 2007, FTA issued a Notice of Proposed Rulemaking (NPRM)⁴ to implement SAFETEA-LU provisions into the evaluation process and make additional changes that FTA believes will improve the New Starts program. However, FTA's proposed changes to the current evaluation framework were not well received by Members of Congress and the transit industry, and the Consolidated Appropriations Act of 2008 prohibited FTA

²For more information on changes SAFETEA-LU made to the New Starts program and the status of their implementation, see GAO, *Public Transportation: New Starts Program in a Period of Transition*, GAO-06-819 (Washington, D.C.: Aug. 30, 2005) and GAO, *Public Transportation: Future Demand Is Likely for New Starts and Small Starts Programs, but Improvements Needed to the Small Starts Application Process*, GAO-07-917 (Washington, D.C.: July 27, 2007).

³GAO-07-917.

⁴72 Fed. Reg. 43328 (Aug. 3, 2007).

from spending money to issue the final rule this fiscal year.⁶ These issues and the upcoming reauthorization of all surface transportation programs, including the New Starts program, have led stakeholders and policymakers to re-examine the existing evaluation process and consider potential modifications and other options for evaluating New Starts projects in the future.

We are required by SAFETEA-LU to report each year on FTA's processes and procedures for evaluating, rating, and recommending New Starts projects for federal funding and on FTA's implementation of these processes and procedures. This report discusses the (1) information captured by New Starts project justification criteria, (2) challenges FTA faces as it works to improve the New Starts program, and (3) options for evaluating New Starts projects. In addition, appendix I contains an overview of FTA's fiscal year 2009 New Starts Annual Report and budget request. To address these objectives, we reviewed SAFETEA-LU, FTA guidance and regulations governing the New Starts program and other FTA documents, including the annual New Starts report; reviewed and summarized research about the impacts of transit projects; attended New Starts Listening Sessions in Washington, D.C. and Charlotte, N.C. to learn more about the NPRM; interviewed experts, consultants, project sponsors, industry associations, and Department of Transportation (DOT) officials about the current and proposed New Starts evaluation frameworks, as well as other options for evaluating projects; and analyzed a sample of comments to FTA's docket on the NPRM for New Starts and Small Starts. Appendix II contains additional information about our scope and methodology. We conducted this performance audit from October 2007 to June 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Results in Brief

FTA primarily uses cost-effectiveness and land use criteria to evaluate New Starts projects, but concerns have been raised about the extent to

⁶Pub. L. No. 110-161, Division K, Title I, Sec. 170, 121 Stat. 2401, Dec. 26, 2007. "None of the funds provided or limited under this Act may be used to issue a final regulation under section 5309 of title 49 [i.e., New Starts], United States Code, except that the Federal Transit Administration may continue to review comments received on the proposed rule (Docket No. FTA-2006-25737)."

which the measures for these criteria capture total project benefits. To assess the land use criterion, FTA uses three evaluation measures, including land use in the project area, the extent to which the area has transit supportive plans and policies, and the performance and impacts of these policies. FTA's current transportation system user benefits (TSUB) measure, which is used along with costs to assess a project's cost-effectiveness, focuses on how proposed projects will improve mobility by reducing the real and perceived cost of travel. FTA told us that such mobility improvements are a critical goal of all transit projects and that most secondary project benefits, including economic development, are derived from improvements that reduce users' travel times. While the literature and most experts we consulted with generally agree with this contention, they also raised concerns that certain benefits are not captured by the existing cost-effectiveness measure. For example, experts and project sponsors we spoke to noted that FTA's TSUB measure does not account for benefits to nontransit users, such as highway users, or capture any economic development benefits that are not directly correlated to mobility improvements, such as benefits to people who are willing to pay more to live near transit stations in order to preserve their option to use it in the future.⁶ As a result, FTA may be underestimating transit projects' total benefits, particularly in areas looking to use these projects as a way to relieve congestion or promote more high-density development. In these cases, it is unclear the extent to which FTA's current approach to estimating benefits impacts how projects are ranked in FTA's evaluation and ratings process. FTA officials acknowledged many of these limitations. However, they also noted that resolving these issues would be difficult without a substantial investment of resources to improve and update local travel models, particularly since these models generate the travel forecasts required to calculate TSUB and estimate other project benefits.

FTA faces several systemic challenges to improving the New Starts program, including multiple program goals that are reflected in the evaluation criteria, limitations in travel modeling capacity, the need to maintain the rigor while minimizing the complexity of the evaluation process, and developing clear and consistent guidance for incorporating qualitative information into the evaluation process. The New Starts

⁶According to FTA officials, the TSUB measure and existing software are designed to capture benefits that accrue to highway users, but the forecasts used by local models are not reliable and as a result, are not used.

evaluation criteria, which have been delineated in previous transportation legislation and recently were augmented by SAFETEA-LU to include economic development, establish multiple goals for the program. The establishment of multiple goals has led to varying expectations between FTA and project sponsors about what types of projects should be funded through the program. For example, experts and project sponsors told us that transit projects may emphasize multiple goals, including economic development and mobility improvements, while FTA told us that the primary emphasis of the New Starts program is to fund transit projects that create significant mobility improvements and has designed the evaluation framework to reflect this goal. As a result, some project sponsors may be devoting substantial resources to apply for New Starts funding for projects that are incompatible with FTA's interpretation of the program goals and, thus, will not rate well under FTA's current evaluation process because they do not seek to achieve substantial travel time savings. Additionally, models used to generate local travel demand forecasts are limited. This affects a model's ability to accurately represent travel behavior, and as a result, current models may not provide all of the information needed to properly evaluate transit projects. FTA has taken some steps to mitigate the modeling limitations, such as incorporating proxy measures to account for project impacts like land use and developing a request for proposals to seek approaches for predicting changes in highway user benefits, but faces challenges in doing so. The Federal Highway Administration (FHWA) declined to be involved in the request for proposals because it deemed the issue to be only relevant to transit, although FTA officials stated that travel model improvements would affect how all planning is done and, thus, have impacts on numerous local, state, and federal programs, including highway programs. Furthermore, they also noted that the request for proposal is only a first step to improving local travel models, and additional resources are needed to ensure that these changes can be implemented in the future. The upcoming reauthorization of all transportation programs, including the New Starts program, provides an opportunity to seek additional resources to improve local travel models. Finally, experts and some project sponsors we spoke with support FTA's rigorous process for evaluating proposed transit projects but are concerned that the process has become too burdensome and complex. In response to such concerns, FTA has tried to simplify and balance the evaluation process in several ways, including developing the Very Small Starts eligibility category within the Small Starts

program⁷ and incorporating qualitative information into its assessments. However, project sponsors we spoke to emphasized the continued need for clear, consistent guidance on how such qualitative information will be used.

Experts and project sponsors we interviewed discussed different options for evaluating proposed transit projects, but identified significant limitations of each option. Furthermore, all of these options are impacted by the systemic challenges discussed above, including limitations of local travel models and the need to balance the rigor of the evaluation process with minimizing its complexity. The options identified by experts and project sponsors include the following:

- One option is to revise the current New Starts evaluation process in order to improve the program and respond to SAFETEA-LU provisions, as proposed by FTA in its August 2007 NPRM and proposed policy guidance. While some experts we spoke to appreciated FTA's efforts to maintain the rigor of the current evaluation process, others noted that the proposed revisions outlined by the NPRM may still underestimate total project benefits. For example, FTA's measure of mobility improvements does not account for benefits accruing to highway users, and its measures of environmental benefits may not properly distinguish among projects. FTA acknowledged that some benefits may not be captured by their proposed measures and told us that they hope to resolve these issues through collaborative efforts to improve local travel models and measures of environmental benefits. In particular, FTA officials are working with officials from the Office of the Secretary on a request for proposals that would identify ways to better estimate highway speeds, which could improve the accuracy of local travel models. FTA also plans to initiate a long-term effort, in consultation with the transit community, to develop more robust environmental measures. However, FTA has not yet set timelines for completing these efforts. Until this latter effort is completed, project sponsors will continue to develop and submit information on environmental benefits that is not useful for evaluation and rating purposes.
- A second option is using benefit-cost analysis to evaluate projects. Unlike FTA's current measures, benefit-cost analysis would attempt to monetize all benefits and costs, which experts told GAO would be a more

⁷The Very Small Starts program is a project eligibility category introduced by FTA in 2006 for projects with a total capital cost of less than \$50 million.

comprehensive approach. While many experts we spoke to said that benefit-cost analysis is a useful tool for comparing projects' benefits and costs over time, others noted the difficulty of quantifying certain benefits, particularly given limitations of local travel models. FTA officials told us that they do not support using benefit-cost analysis because of these challenges. In addition, FTA is currently prohibited by statute from considering the dollar value of mobility improvements in evaluating projects.⁸

- A third option is evaluating projects differently based on their primary goal, so that federal transit investments better support local transit goals. However, many experts and project sponsors said that New Starts projects should go through an evaluation process designed to evaluate projects on the basis of national priorities.
- A fourth option is devolving the evaluation process to the state level by making New Starts a formula grant program. Under this framework, though, the ability of the federal government to influence and hold projects accountable could be limited.

To improve the New Starts evaluation process and the measures of project benefits, which could change the relative ranking of projects, we are recommending that the Secretary of Transportation take the following five actions: (1) seek additional resources to improve local travel models in the next authorizing legislation; (2) legislative change to allow FTA to consider the dollar value of mobility improvements in evaluating projects, developing regulations, or carrying out any other duties; (3) direct the Administrator of FTA to establish a timeline for issuing, awarding, and implementing the result of its request for proposals on short- and long-term approaches to measuring highway user benefits from transit improvements; (4) direct the Administrator of FTA to establish a timeline for completing its longer term effort to develop more robust measures of transit projects' environmental benefits that are practically useful in distinguishing among proposed projects including consultation with the transit community; and (5) direct the Administrators of FTA and FHWA to collaborate to improve the consistency and reliability of local travel models, including the aforementioned request for proposals on approaches to measuring highway user benefits.

⁸49 U.S.C. § 5309. Pub. L. No. 105-178, Section 3010, 112 Stat. 357, June 9, 1998. The legislative record is silent as to why this provision was enacted.

We provided a draft of this report to DOT for review and comment. DOT generally agreed with the findings and recommendations in this report, and provided clarifying comments and technical corrections, which we incorporated, as appropriate.

Background

FTA generally funds New Starts projects through FFGAs, which are required by statute to establish the terms and conditions for federal participation in a New Starts project. FFGAs may also define a project's scope, including the length of the system and the number of stations; its schedule, including the date when the system is expected to open for service; and its cost. For projects to obtain FFGAs, New Starts projects must emerge from a regional, multimodal transportation planning process. The first two phases of the New Starts process—systems planning and alternatives analysis—address this requirement. The systems planning phase identifies the transportation needs of a region, while the alternatives analysis phase provides information on the benefits, costs, and impacts of different options, such as rail lines or bus routes, in a specific corridor versus a region. The alternatives analysis phase results in the selection of a locally preferred alternative, which is the New Starts project that FTA evaluates for funding. After a locally preferred alternative is selected, the project sponsor submits an application to FTA for the project to enter the preliminary engineering phase.⁹ When this phase is completed and federal environmental requirements are satisfied, FTA may approve the project's advancement into final design,¹⁰ after which FTA may approve the project for an FFGA and proceed to construction. FTA oversees grantees' management of projects from the preliminary engineering phase through the construction phase.

⁹During the preliminary engineering phase, project sponsors refine the design of the proposal, taking into consideration all reasonable design alternatives and estimating each alternative's costs, benefits, and impacts (e.g., financial or environmental). According to FTA officials, to gain approval for entry into preliminary engineering, a project must (1) be identified through the alternatives analysis process, (2) be included in the region's long-term transportation plan, (3) meet the statutorily defined project justification and financial criteria, and (4) demonstrate that the sponsors have the technical capability to manage the project during the preliminary engineering phase. Some federal New Starts funding is available to projects for preliminary engineering activities, if so appropriated by Congress.

¹⁰Final design is the last phase of project development before construction and may include right-of-way acquisition, utility relocation, and the preparation of final construction plans and cost estimates.