

# Review of Federal Transit Administration New Starts Project Funding Process

## Introduction

### History of Federal Transit Administration

The Federal Transit Administration (FTA) is an agency within the United States Department of Transportation (DOT) that provides financial and technical assistance to local public transit systems. The FTA is one of ten modal administrations within the DOT. Headed by an Administrator who is appointed by the President of the United States, the FTA functions through a Washington, D.C., headquarters office and ten regional offices which assist transit agencies in all states, the District of Columbia, and the territories. Until 1991, it was known as the Urban Mass Transportation Administration (UMTA).

Public transportation includes buses, subways, light rail, commuter rail, monorail, passenger ferry boats, trolleys, inclined railways, and people movers. The federal government, through the FTA, provides financial assistance to develop new transit systems and improve, maintain, and operate existing systems. The FTA oversees grants to state and local transit providers, primarily through its ten regional offices. These grantees are responsible for managing their programs in accordance with federal requirements, and the FTA is responsible for ensuring that grantees follow federal mandates along with statutory and administrative requirements [1].

In 1962 President Kennedy sent a major transportation message to Congress. It called for the establishment of a program of federal capital assistance for mass transportation. Said President Kennedy: "To conserve and enhance values in existing urban areas is essential. But at least as important are steps to promote economic efficiency and livability in areas of future development. Our national welfare therefore requires the provision of good urban transportation, with the properly balanced use of private vehicles and modern mass transport to help shape as well as serve urban growth."

President Kennedy never lived to see his idea enacted into law. It was, rather, President Lyndon Johnson who signed the Urban Mass Transportation Act into law on July 9, 1964. The new measure provided \$375 million in capital assistance over three years. It passed the House by a vote of 212-to-129 and cleared the Senate 52-41.

This has been the beginning of the program of financial assistance for mass transportation that is today managed and run by the Federal Transit Administration [2].

## New Starts Program

The Federal Transit Administration's (FTA) discretionary New Starts program is the federal government's primary financial resource for supporting locally-planned, implemented, and operated transit "guideway" capital investments. From heavy to light rail, from commuter rail to bus rapid transit systems, the FTA's New Starts program has helped to make possible hundreds of new or extended transit fixed guideway systems across the country [3].

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) has authorized \$6.6 billion in New Starts funding through fiscal year 2009. SAFETEA-LU has been extended and in fiscal year 2010, Congress appropriated \$2 billion in New Starts funding. Annually, \$200 million of this funding is set-aside for "Small Starts," that is, major transit capital projects costing less than \$250 million, and requiring less than \$75 million in Small Starts resources. While the level of New Starts funding has never been higher, neither has the demand for it. SAFETEA-LU authorized over 330 projects nationwide to compete for these discretionary federal dollars. Many of these projects are currently in FTA's New Starts pipeline (that is, projects pursuing New Starts funding which are in the preliminary or final design stages of development, or Small Starts projects approved into the single "project development" phase).

SAFETEA-LU directs FTA to evaluate and rate candidate New Starts projects as an input to federal funding decisions and at specific milestones throughout each project's planning and development. SAFETEA-LU further supports a comprehensive planning and project development process which New Starts projects must follow, and which is intended to assist local agencies and decision-makers evaluate alternative strategies for addressing transportation problems in specified corridors and select the most appropriate improvement to advance into engineering, design, and construction. Planning and project development for New Starts projects is a continuum of analytical activities carried out as part of metropolitan systems planning and the National Environmental Policy Act of 1969 (NEPA) review processes.

On average, FTA support for capital investment projects nationwide is about \$2.0 Billion. According to Annual Report on Funding Recommendations FY12 Section 5309 Major Capital Investment Program Appropriations and Allocations is \$1.82 Billion and the recommendation for FY2013 is \$2.24 Billion.

## Planning and Project Development Process for New Starts

For applying for federal funds for capital investment on transit projects, the idea of the project has to go through alternative analysis, preliminary engineering, and final design. Figure 1 depicts the stages relative to each other.

System planning is done at the level of the region under a financial constrained long range plan. The existence of the project in the 25 year plan of the region does not guarantee presence of funds for the project but it will

significantly assists in bringing attention and consensus about the project and its funding mechanism. Applying for Federal funds almost always requires significant local match. This amount for New Starts project is usually more than 50% of the project cost, which is significant.

Alternatives analysis begins with a solid understanding of the transportation problems in need of solving – that is, a corridor’s purpose and need. Once known, study sponsors – typically transit agencies, metropolitan planning organizations, or state Departments of Transportation – identify and design a number of capital investment strategies to meet its purpose and need. The definition of these alternatives should reflect a range of high and low cost capital improvements, including non-guideway options which can serve as a “baseline” for measuring the merits of higher level investments. Measures for evaluating the relative merits of alternatives are identified, as are technical methodologies for generating the information used to support such measures; these will typically include disciplines such as travel forecasting, capital and operations and maintenance costing and environmental and land use analyses. Finally, costs, benefits, and impacts of each alternative are developed and evaluated, funding strategies are analyzed, and a locally preferred alternative (LPA) is selected to be advanced for further development. This is the most analytical part of the process [5].

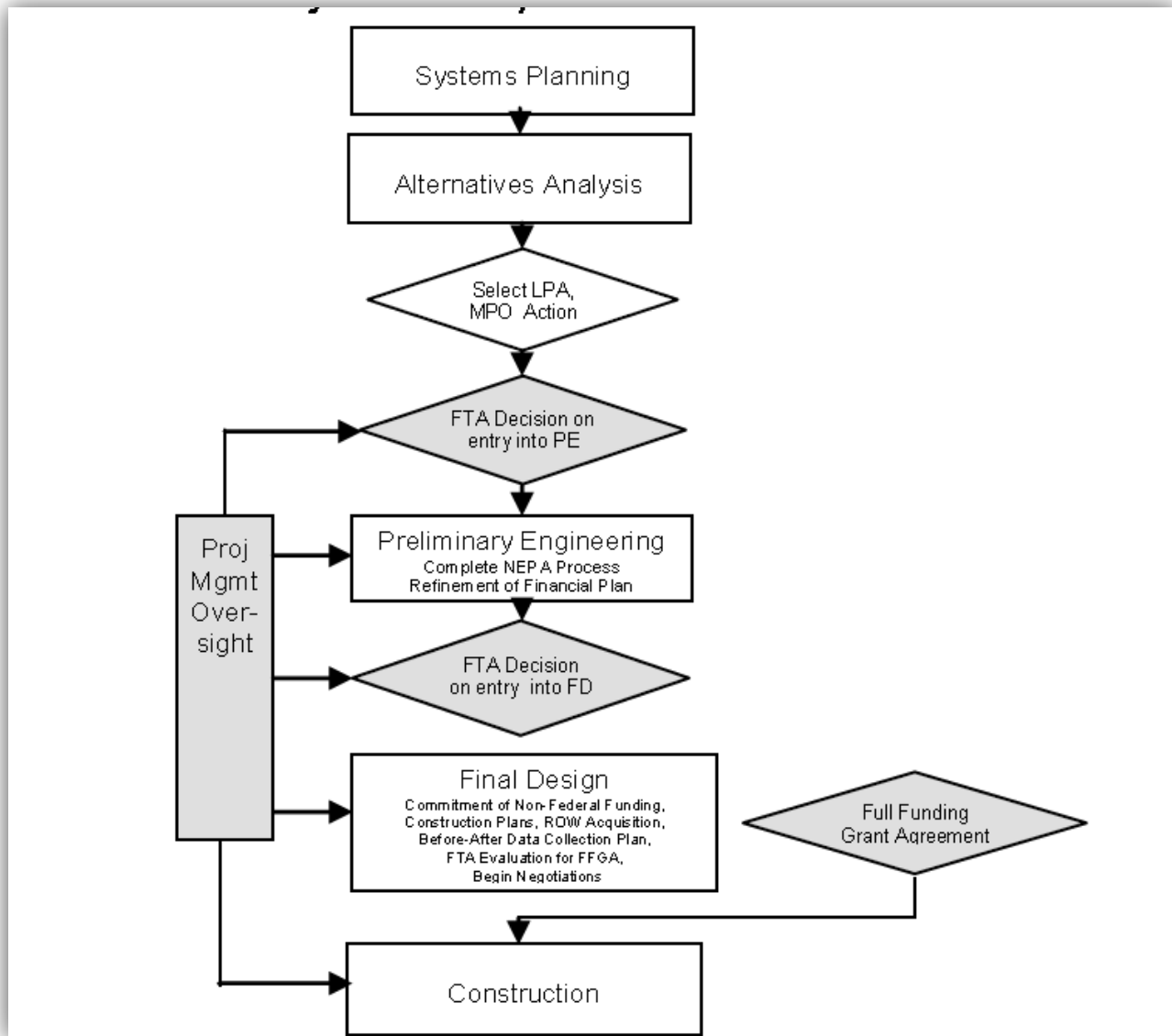


Figure 1. New Starts Planning and Project Development Process [4]

Once local stakeholders have completed alternatives analysis and have selected a proposed New Starts mode and general alignment as its locally preferred alternative (LPA), project sponsors request FTA approval to begin preliminary engineering (PE). During PE, the New Starts project sponsor refines the definition of the LPA's scope, schedule, and budget sufficient to complete the Federal environmental review process required by the National Environmental Policy Act of 1969 (NEPA); that is, to determine the environmental, transportation, cultural, and social impacts of the proposed project and to develop (and commit to the implementation of) strategies for mitigating them. In addition, the products of preliminary engineering for New Starts projects should include a final scope, including provisions for compliance with the Americans with Disability Act; a highly accurate

cost estimate; a thorough project management plan suitable for the phase of project development; and a solid financial plan, with a majority of the proposed local funding committed to the project final design

Final design is the last phase of New Starts project development during which the project sponsor prepares for construction. This preparation is intended to provide a smooth transition between project development and project implementation. FTA approval to enter final design authorizes the project sponsor to undertake construction preparation activities such as utility relocation, right-of-way acquisition, development of detailed specifications, and preparation of final construction plans, development of construction cost estimates, and development and/or solicitation of bid documents. Remaining uncertainties or risks associated with minor design scope and the procurement process are also addressed in final design.

## **Project Justification**

A key part of success in New Starts application is the justification of the project. This section describes how the projects are evaluated from FTA standpoint. At the heart of project evaluation is significant travel demand modeling of a base line versus selected project to quantify the effects of the project in various dimensions. At the end, all project benefits or dis-benefits are accumulated and compared to the cost of project. Cost is also broken into capital and annual cost of the project. IN both tracks of the analysis, some level of uncertainty analysis is performed and document. This section briefly describes new suggested process for project evaluation.

## **Mobility Improvements**

To evaluate mobility improvements FTA considers the total number of trips using the proposed project, with extra weight given to trips that would be made on the project by transit dependent persons. (Transit dependent trips are defined in local travel models generally in one of two ways: as trips made by those in households having no cars or as trips made by those living in households in the lowest income bracket as defined locally.) Each trip by a transit dependent person would be equivalent to two trips by a non transit dependent person under the proposed mobility improvements measure

The mobility improvements measure would be computed by adding together the estimated number of transit trips on the project taken by non-transit dependents and the number of transit trips taken by transit dependent people multiplied by a factor of two, thereby giving extra weight to these trips.

## **Environmental Benefits**

FTA evaluates environmental benefits based upon the anticipated direct and indirect benefits to human health, safety, energy, and the air quality environment that are expected to result from implementation of the proposed project compared to either the existing environment with the transit system in the current year or, at the discretion

of the project sponsor, both the existing environment with the transit system in the current year and the no-build environment and transit system in the horizon year. The estimated benefits would be monetized and compared to the annualized capital and operating cost of the proposed project.

Environmental benefits would include the following sub-factors: change in air quality criteria pollutants, change in energy use, change in greenhouse gas emissions, and change in safety. These would be calculated predominantly from estimates of changes in highway and transit vehicle miles traveled (VMT). All measures would be converted from VMT into their native units (e.g., tons of emissions or total accidents) using national-level standard conversion factors. The native units would be monetized based on standard dollar values. For air quality sub-factors, the standard dollar values would recognize that a ton of emissions reduced in a non-attainment area for a given pollutant would be worth more than a ton of emissions reduced in an attainment area. FTA notes a significant part of the benefits that come from reducing energy use are accounted for by the resulting reduction in pollutant and greenhouse gas emissions. To avoid double counting, the monetary value of energy conservation will be factored down by some percentage specified by FTA in future policy guidance. The monetized values of the various environmental benefits would be summed and compared to the annualized capital and operating cost of the proposed project.

## **Operational Benefits**

The change in operating and maintenance (O&M) cost per “place-mile” compared to either the existing transit system in the current year or, at the discretion of the project sponsor, both the existing transit system in the current year and the no-build transit system in the horizon year.

The operating-efficiency measure would be computed as the project-caused change in annual O&M costs divided by the project-caused change in annual place-miles of transit service. If the project sponsor chooses to consider the horizon year in addition to the current year, the overall measure of operating efficiency would be a weighted average that considers both years. FTA proposes a weight of 50 percent for the current year data and a weight of 50 percent for the horizon year data.

## **Cost Benefits**

The cost effectiveness measure is the cost per trip of the project, where cost includes changes in capital, operating, and maintenance costs compared to either the existing transit system in the current year or both the existing transit system in the current year and the no-build transit system in the horizon year.

The cost-effectiveness measure would be computed as the annualized capital costs plus annual O&M costs of the project divided by the annual number of trips using the project. For calculation of this measure, the capital costs of scope elements for which the project sponsor will obtain Leadership in Energy and Environmental Design (LEED) certification or other “betterments” would be reduced by a fixed percentage specified by FTA.

## Transit Supportive Land Use

The land use measure includes an examination of existing corridor and station area development; existing corridor and station area development character; existing station area pedestrian facilities, including access for persons with disabilities; existing corridor and station area parking supply; and existing publically supported housing in the corridor and station areas.

The rating is primarily based on quantitative measures, including station area population densities and total employment served by the system, which would be obtained from census data, and existing publically supported housing in the corridor, which would be obtained from readily available data published by the Department of Housing and Urban Development. Poor pedestrian accessibility may reduce the rating, as it reduces the effective amount of population and employment directly served by the system. Otherwise, the presence of high trip generators, a pedestrian-accessible and friendly station area environment, and limited availability of parking all serve to support the rating.

## Economic Development

The measure of economic development effects is proposed to be the extent to which a proposed project is likely to enhance additional, transit-supportive development in the future based on the existing or anticipated plans and policies to support economic development proximate to the project. This measure is hard to quantify due to the complex nature of the economic developments. FTA suggested measures are as follows:

- FTA would evaluate existing transit supportive plans and policies in a manner that is similar to the existing practice, with the addition of an examination of the plan and policies to support maintenance of or increases to the share of affordable housing in the corridor.
- FTA would report the project sponsor's estimate of the number of U.S. jobs related to design, construction, operation and maintenance of the project.
- At the project sponsor's option, an additional quantitative analysis (scenario based estimate) may be undertaken.

The benefits derived from the optional quantitative economic development scenario analysis would be monetized and compared to the annualized capital and operating cost of the proposed project

## Local financial Commitment

SAFETEA-LU requires that proposed projects be supported by an acceptable degree of local financial commitment, including evidence of stable and dependable financing sources to construct, maintain and operate the transit system or extension, and maintain and operate the entire public transportation system without requiring

a reduction in existing services. The measures proposed to be used for the evaluation of the local financial commitment for proposed New Starts projects are:

- The proposed share of total project capital costs from sources other than FTA major capital investment program, including other Federal transportation funds and the local match required by Federal law;
- The current financial condition, both capital and operating, of the project sponsor;
- The commitment of funds for both the proposed project and the ongoing operation and maintenance of the project sponsor's system once the project is built.
- The reasonableness of financial plan, including planning assumptions, cost estimates, and the capacity to withstand funding shortfalls or cost overruns.

## Conclusions

In this research paper, I investigated the FTA process for financing transit projects, called New Starts. New Starts program is a centralized competitive funding source in which eligible projects from all regions of the country can compete against each other. The competitive nature of the process creates a challenge for both local project sponsors who request the funds and federal project evaluators to compare and rank the projects for the very limited funding. Each year, there is about \$2 Billion available to New Starts program. Evaluation criteria have been heavily debated among participants. Also, providing level grounds for evaluation for all competing projects across the nation creates technical and conceptual challenges for fairness, comprehensiveness, and effectiveness of the projects. The high visibility of these projects inevitably absorbs political attention for politicians, which makes the process even more complex.

In this research, I explain the process, the measures, and to some degree the methods that are used by FTA for project evaluation. This report provides a systematic framework approach for transportation project evaluation that is developed by FTA. Even though the New Starts process is an evolving one as the administrators of the process learn the challenges of the process, the content of this research can be used as a resource for an introduction to New Starts program and can be easily expanded to non-transit projects, as well.

Due to economic recession of 2008, President's Obama's administration has introduced Transportation Investment Generating Economic Recovery (TIGER) discretionary federal funding programs. These funding mechanisms were also centralized with the goal of providing financial resources for labor heavy projects to create jobs in a short period of time. The idea of centralized federal financing based on eligibility has a potential to grow in future transportation bill. New Starts program provides practical and realistic experience and guidance for understanding the complexity of centralized competitive financing for all public projects.

New starts process is highly technical and generally rewards the projects that are cost effective for public. The challenge is that some of the benefit calculations are intrinsically difficult and can be potentially manipulated to make a project seem better than it is. FTA is trying to create a level ground by defining the measures and methods of calculation. As the evaluation criteria become more encompassing, the evaluation process becomes



more complicated. The efforts of FTA either provides an opportunity for better planning through objective evaluation or reveals deficiency in the technical process for planning large scale projects.

The extension of this research can be constructed as overhauling one or few of the evaluation criteria proposed by FTA and research them in detail with the goal of suggesting streamlined methods.

## References

The references of this write up are mostly from FTA web site. There is a wealth of material on the web site but it is fairly difficult to find a specific topic. I have listed the materials that I could find as of May 8, 2012. Some of the references are documents that do not have proper publication titles, such as white papers and presentations that cannot be properly quoted here.

1-[http://en.wikipedia.org/wiki/Federal\\_Transit\\_Administration](http://en.wikipedia.org/wiki/Federal_Transit_Administration)

2- <http://www.fta.dot.gov/about/14103.html>

3- [http://www.fta.dot.gov/12304\\_2608.html](http://www.fta.dot.gov/12304_2608.html)

4-[http://www.fta.dot.gov/12304\\_2608.html](http://www.fta.dot.gov/12304_2608.html)

5-FTA Major Capital Transit Investment Fact Sheet Alternatives Analysis