

Alternatives Analysis, New Starts



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1

Outline

- [Overview](#)
 - [The process at the local level](#)
 - [FTA new starts process](#)
 - [Project justification](#)
 - [Financial rating](#)
 - [Forecasting methods](#)
 - [Small starts process](#)
-

2

Overview



- ❑ New starts is the term used by the Federal Transit Administration for the process of funding major new fixed guideway transit facilities such as light rail transit lines, bus rapid transit, commuter rail or heavy rail transit.
- ❑ Systems may be eligible for federal capital funds to pay a portion of their costs.
- ❑ To receive funding, agencies must conduct a series of planning and analysis steps that meet specific guidelines and may also include a full environmental impact statement.

3

Overview

- ❑ New starts funding is limited and communities must compete with each other for funds.
- ❑ It is a competitive process, in that different projects are rated by FTA and only those ranked above others will be eligible for federal funds.



4

Resources

- Guidelines and procedures can change over time and the latest information should be used.
 - These are posted on FTA web sites
 - http://www.fta.dot.gov/planning/planning_environment_5221.html
 - the FTA [annual report of the status of the new starts program](#)
 - [the process that is used to rate competing projects.](#)
 - The FTA [manual for reporting instructions](#) for the new starts criteria
 - Information on FTA [outreach meetings and new starts roundtables](#) that provide briefings on the latest procedures
 - FTA what's new? (latest versions of guidelines) http://www.fta.dot.gov/planning/newstarts/planning_environment_5203.html
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5

The process at the local level

- New start projects are often highly controversial at the local level
 - Sources of local funding are a major hurdle to any project
 - Implemented projects require an elected official such as a mayor or governor who serves as a political champion who expends considerable political capital to get project implemented
 - If something is implemented, subsequent projects are less controversial
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6

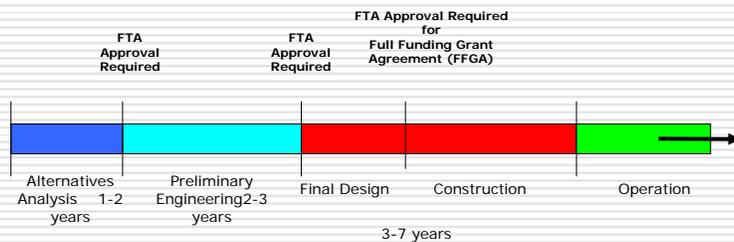
Referenda

- ❑ Often a referenda is needed to secure local capital and operating funds. Sales taxes are often used as a source of local funds.
- ❑ Many communities have had several referenda fail prior to approval.
- ❑ Referenda tend to be successful if they are multimodal (include bus, highway, bicycle, etc.) and have a comprehensive list of projects throughout the region rather than in a single corridor.

7

New Starts Process

■ Project Development: Typically 6-12 Years



8

Environmental Review

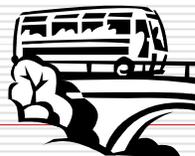


- ❑ Most new starts projects require an environmental impact statement or an environmental assessment
- ❑ An EA or EIS is done as part of the alternatives analysis when different modes and locations are examined. Must be completed prior to preliminary engineering
- ❑ Begins with project scoping: What alternatives to be looked at?, what criteria will be used?

9

Alternatives:

- ❑ The alternatives analysis phase of the process involves the selection of a preferred technology and alignment.
- ❑ Alternative technologies that may be considered are light rail, heavy rail, commuter rail, bus rapid transit and others.
- ❑ Alternative locations of the systems must also be considered for each of the technologies.



10

Base Alternative:

- The base alternative is the best that can be done to provide transit service without the construction of some sort of fixed guideway.
- This alternative is used as a basis for comparison to 'build' alternatives.
- Benefits of a build alternative are found by comparing it with the base alternative.



11

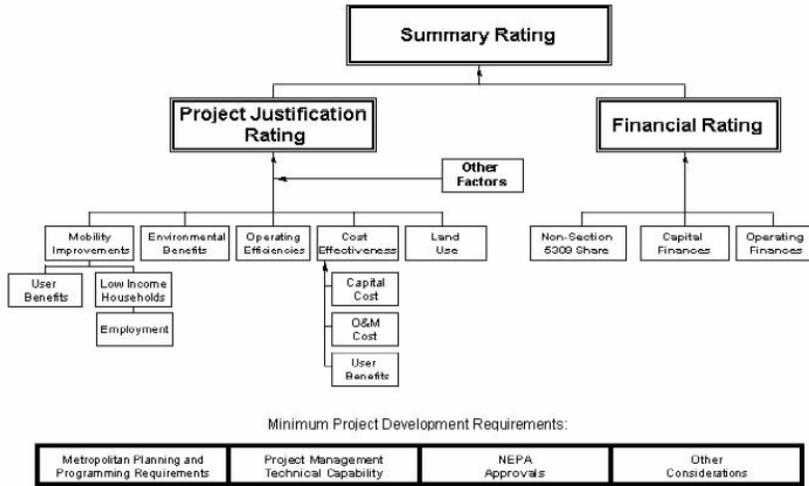
Project justification



- FTA asks for information on the following criteria to compare competing projects:
 - cost effectiveness,
 - transportation supportive land use policies and future patterns,
 - mobility improvements,
 - environmental benefits,
 - operating efficiencies, and
 - other factors.
- Financial Information
- Economic Development and reliability of the forecasting methods used are also required by SAFTEA-LU

12

The FTA New Starts Evaluation and Rating Framework



13

FTA Criterion

Criterion	Measures/Categories
Cost Effectiveness	Incremental Cost per Hour of Transportation System User Benefit
Transit Supportive Land Use and Future Patterns	Existing Land Use Transit Supportive Plans and Policies Performance and Impacts of Policies
Mobility Improvements	Normalized Travel Time Savings (Transportation System User Benefit per Project Passenger Mile) Low-Income Households Served Employment Near Stations
Operating Efficiencies	System Operating Cost per Passenger Mile
Environmental Benefits	Change in Regional Pollutant Emissions Change in Regional Energy Consumption EPA Air Quality Designation

Use of Criteria by FTA

- ❑ FTA has found that the operating efficiency and environmental benefits criteria does not show significant differences between competing new starts projects nationwide and normally does not use this criteria to select projects.
- ❑ Projects are compared on the basis of cost effectiveness, land use, mobility improvements and other factors



15

In general, a community will have a better ranking than others if:

- ❑ The proposed project leads to considerable overall savings in travel time, wait time or transfers
- ❑ It is accompanied with transit supportive land use policies to enhance the community
- ❑ It serves large numbers of low income households and jobs.
- ❑ It uses multiple funding sources that lower the Federal new starts share.

16

Specific Criteria

- Project Justification
 - Cost Effectiveness
 - Transit Supportive Land Use and Future Patterns
 - Mobility Improvements
 - Operating Efficiencies
 - Environmental Benefits
 - Other factors
- Financial Rating



17

Cost effectiveness Criteria

- Cost effectiveness measure is the total annual cost divided by the user benefits.
- User benefits are found by comparing the proposed project with a base alternative. User benefits consist of changes in the following trip characteristics:
 - In-vehicle time
 - Walk and wait time
 - Number of transfers
 - Mode specific constants
- This is done by including all modes



18

Cost Effectiveness - 2

- The costs of an alternative are the annualized total capital cost of the project in base year dollars and the annual operating and maintenance costs of the project.
- Local travel forecasting results are interpreted by software (Summit) developed by FTA to calculate cost effectiveness measures.
- Calculation of user benefits may require some modifications to the regional travel demand models

Criteria for Transportation Supportive Land Use Policies

- This criteria looks at how well transit projects facilitate and enhance land use along their routes.
- Separate criteria are used preliminary engineering and/or final design.
- The general categories are:
 - characteristics of existing land use in the corridor,
 - the presence of transit supportive plans and policies and
 - the performance impact of the land use plans and policies.

Land use ratings are high if:

- ❑ Current levels of population, employment, and other trip generators in station areas are sufficient to support a major transit investment.
- ❑ Most station areas are pedestrian-friendly and fully accessible.
- ❑ Adopted and enforceable growth management and land conservation policies are in place throughout the region.
- ❑ Existing and planned densities, along with market trends in the region and corridor are strongly compatible with transit.
- ❑ Local jurisdictions have adopted zoning changes that strongly support a major transit investment in most or all transit station areas.

21

Land use ratings are high if:

- ❑ Transit agencies and/or regional agencies are working proactively with local jurisdictions, developers, and the public to promote transit-supportive land use planning and station area development.
- ❑ The transit agency has established a joint development program and identified development opportunities.
- ❑ Agencies have adopted effective regulatory and financial incentives to promote transit-oriented development.
- ❑ Public and private capital improvements are being programmed in the corridor and station areas which implement the local land use policies and which leverage the Federal investment in the proposed corridor.

22

Land use ratings are high if:

- A significant number of development proposals are received for transit-supportive housing and employment in station areas.
- Significant amounts of transit-supportive development have occurred in other transit corridors and station areas in the region.
- A significant amount of land in station areas is available for new development or redevelopment at transit-supportive densities. Local plans, policies, and development programs, as well as real estate market conditions, strongly support such development.



23

Mobility Improvement Criteria

- Mobility improvements are measured in three ways:
 - normalized travel time savings as measured in transportation
 - user benefits per passenger mile,
 - Number of low income households served and number of jobs served.
- User benefits are measured the same as with the cost effectiveness strategies, using savings in in-vehicle travel time, walk time, wait time, transfers and mode specific constants.
- Jobs and households served within ½ mile of the stations on the proposed system are estimated and reported as jobs pre station and low income households per station.

24

Operating Efficiency Criteria

- ❑ Operating efficiencies are measured by system operating costs per passenger mile. This is done by comparing total operating costs of the system with the new start vs. the baseline alternative.
- ❑ However, FTA has found that the operating efficiency criteria does not show significant differences between competing new starts projects nationwide and does not use this criteria to select projects.

Environmental Benefits

- ❑ Environmental benefits deal with air quality effects. If the project is in a non-attainment area for air quality and pollution levels are reduced the project gets a high rating, if the project is in an attainment area and reduces pollutants, it gets a medium rating.
- ❑ Other environmental factors while important locally are not considered by FTA in their ratings because they have found that there are not major differences between competing projects among different cities.

Other Factors

- FTA will also consider other factors when evaluating projects. These include:
 - Environmental justice and equity
 - Access to employment and welfare to work initiatives
 - Livable communities and local economic development
 - Innovative financing procurement and construction techniques
 - Cost effectiveness with alternative land use related to economic development impacts
 - Any other factor that provides additional benefits
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27

Financial Rating



- FTA separately looks at the financial rating of the project. Three factors are included:
 - the share of costs from other funds than the new starts funds,
 - the proposed capital financing plan and
 - the ability of the agency to fund the operating and maintenance costs of the entire system once the new project is built.
 - Funding for the project can come from federal new starts money, other federal sources, state or local funds.
 - A project with a high percentage of non-new starts money will be rated higher than one than has a lower share.
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28

Capital Funding Plan

- The capital funding plan is evaluated based on
 - the current capital condition,
 - completeness of plan,
 - commitments for funding
 - funding capabilities and
 - the reasonableness of assumptions and estimates.



Operating and Maintenance plan

- The operating and maintenance plan is rated based on
 - current operating financial condition,
 - completeness of plan
 - commitments for operating and maintenance funds
 - funding capacity and
 - reasonableness of assumptions and estimates

Forecasting Methods



- ❑ Travel demand models used to forecast future demand, cost analysis procedures and other procedures to assess impacts should meet certain standards.
- ❑ Methods should use “consistent and defensible measures, reliable data and analytical data consistent with best practices and FTA requirements”
- ❑ There should be agreement on these methods by participating agencies.
- ❑ See:
http://www.fta.dot.gov/16352_18399_ENG_HTML.htm

31

Mode Specific Effects?

- ❑ Will people use a particular mode because of the mode itself or because of its time and cost characteristics alone?
- ❑ For example, it could be that travelers prefer to use a light rail system over bus, because of they prefer the comfort and aesthetics of light rail over that of a bus rather than because of the light rail has time and cost advantages.

32

Mode Specific Constants?

- ❑ FTA will allow 'mode specific constants'. These modify travel demand models to recognize that there are factors beyond time and cost that may affect traveler choices.
- ❑ If used, mode specific constants should be similar or the same as in different urban areas



33

Off peak and special event travel?

- ❑ Off peak – lunch time travel, evenings, weekends, etc.
- ❑ Special events: sporting events, festivals, entertainment activities, etc.
- ❑ Some modes – those with a highly visible fixed guideway such as light rail, heavy rail tend to generate more ridership in off peak times or for special events than other modes.
- ❑ These are not normally estimated as part of regular demand forecasts and need a separate analysis. The ridership impact over time can be substantial, especially if the mode is well located to serve these locations.

34

Large starts, small starts

- SAFTEA-LU provides for simplified methods for smaller projects (less than \$75 million funding and total cost less than \$250 million)
- Small Starts project must either
 - (a) meet the definition of a fixed guideway for at least 50% of the project length in the peak period, or
 - (b) be a corridor-based bus project with the following minimum elements:
 - Transit stations,
 - Traffic signal priority/pre-emption,
 - Low-floor buses or level boarding,
 - Branding of the proposed service, and
 - 10 minute peak/15 minute off peak headways or better while operating at least 14 hours per weekday

35

Small starts process

- Alternatives: the number considered must continue to meet the requirements of NEPA, good planning practices, and proper identification of project costs and benefits for funding recommendations.
- Project Justification: will include land use, cost effectiveness, and other factors (such as economic development), and Local Financial Commitment
- Small starts projects will be rated based on a shorter time frame, i.e. opening year, and less data.
- Other technically acceptable ridership forecasting procedures, besides the traditional four-step model, will be allowed with FTA concurrence.
- See: http://www.fta.dot.gov/planning/newstarts/planning_environment_222.html

36

Very small starts

- Even simpler procedures for very small projects
- Very small start projects are simple, low risk projects that:
 - Do not include construction of a new fixed guideway (qualifying projects include arterial BRT or rail service on existing track);
 - Are in corridors with existing riders who will benefit from the proposed project that exceed 3,000 per average weekday with passenger loadings of at least 1,000 riders at the terminal stations; and
 - Have a total capital cost less than \$50 million and less than \$3 million per mile, exclusive of rolling stock.

Acknowledgements

- Some of this material was developed as part of work being conducted by the Great Cities University consortium under the lead of the University of Alabama at Birmingham using funds provided by the Federal Transit Administration of the U.S. Department of Transportation.
- The opinions expressed are the product of independent university work and not necessarily those of the sponsoring agencies or of the agencies supplying data for the project.