Federal Transit Administration (FTA)

*New Starts* Criteria

Urban Transportation Planning
MIT Course 1.252j/11.540j
Fall 2005

Mikel Murga, MIT Research Associate and Lecturer
Historical Development

- First Policy Statement (1976)
- Policy on Rail Transit (1978)
- Surface Transportation and Uniform Relocation Assistance Act of 1987 (STURAA)
- Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)
- Executive Order 12893 (1994)
- The 1996 Statement of Policy
- Transportation Equity Act for the 21st Century (TEA-21)
Historical Development

- First Policy Statement (1976)
  - A process-oriented approach
  - A new start project subjected to alternatives analyses, including Transportation System Management (TSM)
  - Projects had to be cost-effective

- Policy on Rail Transit (1978)
  - Local financial commitment
  - Local Govt supporting local land use actions
  - Environmental Impact Statement
Historical Development

  - Comparisons between competing projects:
    - Cost effectiveness index of forecast incremental cost per incremental rider for the build alternative
  - Minimum threshold values for funding

- Surface Transportation and Uniform Relocation Assistance Act of 1987 (STURAA)
  - Regulated the “Cost per New Rider” index and threshold values
Historical Development

- **Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)**
  - “Cost effectiveness” ⇒ project justified on comprehensive review of mobility improvements, environmental benefits, cost-effectiveness and operating efficiencies

- **Executive Order 12893 (1994)**
  - Systematic analysis of costs and benefits
    - Quantifiable and qualitative measures of benefits
  - Efficient management of infrastructure:
    - Operation and management of facilities
    - Use of pricing to manage demand
Historical Development

  - Various approaches for project evaluation
- The 1996 Statement of Policy
  - Multiple-measure method of project evaluation
- Transportation Equity Act for the 21st Century (TEA-21):
  - [www.fta.dot.gov](http://www.fta.dot.gov) in the New Starts section
Historical Development

- Transportation Equity Act for the 21st Century (TEA-21) - June 1998
  - Integration of Major Investment Study (MIS) into the FTA/FHWA planning regulations
  - Overall FTA project ratings: “highly recommended”, “recommended” and “not recommended”
  - FTA approval prior to project development
  - Other considerations:
    - Cost of sprawl and infrastructure savings due to compact land use
    - Population density and current transit ridership
    - Technical capacity of grantee to undertake the project
FTA New Starts
Planning and Project Development Process

**SYSTEM PLANNING**
- FTA review of alternatives

**PRELIMINARY ENGINEERING**
- FTA approves New Starts Baseline alternative

**FINAL DESIGN**
- Before and after data collection plan

**CONSTRUCTION**
- Construction Management Start-up

---

**Key**
- **FTA Action**
- **Decision Point**

---

Project Management Oversight
- Quality Control
- Technical Oversight
- Financial Capacity Assessment

---

Alternatives Analysis
- Select LPA, MPO Action, PE application, PMP

FTA Evaluation to Enter PE

Preliminary Engineering
- Complete NEPA Process
- Record of Decision/FONSI
- Refinement of Financial Plan, PMP

FTA Evaluation to Enter Final Design

Final Design
- Commitment of Non-Federal Funds
- Construction Plans, ROW Acquisition

FTA Evaluation for FFGA

Full Funding Grant Agreement

Complete Final Design

Begin Construction
- Construction Management Start-up
TEA-21: Project Justification Criteria

- **FTA descriptive criteria** ("high", "medium-high", "medium", "low-medium" or "low") on:
  - Mobility Improvements (20-year horizon):
    - Time savings (annualize properly working day figures)
    - Captives mobility:
      - No of low income households within ½ miles radius from station
      - Plus no of jobs within a ½ mile radius from stations
  - Environmental Benefits (VMT-Vehicle miles traveled):
    - Air and noise pollution annual tons (CO, NOx, VOC and PM)
    - Energy consumption in BTUs
    - Current regional air quality designation by EPA
  - Operating Efficiencies:
    - Operating cost per passenger-mile. Favor crowding?
TEA-21: Project Justification Criteria

- **FTA descriptive criteria** ("high", "medium-high", "medium", "low-medium" or "low") **on**:
  - Transport System User Benefits (Cost Effectiveness):
    - Goal: To reduce the travel time and out-of-pocket costs
    - Measure changes on capital and operating costs and travel time changes to users of transit, highway and other travel modes
    - It replaces "the cost per new rider" so as:
      - To show benefits to existing users using different modes
      - To avoid bias against existing systems improving travel times and/or crowding

- **Incremental Cost per Incremental Passenger**:
  - It utilizes linked trips (from origin to final destination) which may be composed of several unlinked trips.
TEA-21: Project Justification Criteria

FTA descriptive criteria ("high", "medium-high", "medium", "low-medium" or "low") ON:

- Existing land use, transit supportive land use policies and future patterns:
  - Growth management policies:
    - Concentration of development. Land conservation
  - Transit supportive corridor policies:
  - Supportive zoning regulations near stations
  - Facilities to enhance pedestrian mobility
  - Tools to implement land use policies
TEA-21: Project Justification Criteria

- **FTA descriptive criteria** (“high”, “medium-high”, “medium”, “low-medium” or “low”) on:
  - **Financial Criteria:**
    - Proposed share of project capital costs:
      - Innovative financing techniques
    - Stability and reliability of proposed capital financing plan:
      - Provisions for cost overruns
      - Capital needs for the entire system as planned
      - Operating funding over a 20-year horizon
TEA-21: Project Justification Criteria

- FTA descriptive criteria ("high", "medium-high", "medium", "low-medium" or "low") on:
  - Other factors (an open-ended approach):
    - Degree to which policies and programs are in place as assumed in forecasts (i.e., parking)
    - Project management capability
    - Innovative financial schemes
    - Additional factors relevant to local and national priorities and to the success of the project
    - Equity issues
    - Quality of life issues
The project “No-Build Alternative”

- Not necessarily a “do nothing” scenario
- It is hard to accept that no improvement will occur if the proposed new start does not go ahead
- A single “baseline alternative”:
  - Transit improvements lower in cost than the new start:
    - Traffic engineering measures, reserved lanes, enhanced bus service…
  - “The best you can do” w/o the new start investment
  - It may include highway improvements
  - Same policy measures as for the new start (i.e. parking, land use patterns, transit fares…) Will they be possible??
Travel Demand Forecasting Assumptions:

- Same assumptions on socio-economic variables and land use
- Consistency among alternatives on speeds and out-of-vehicle times (access, wait, transfers...)
- Transit speeds must reflect congestion
- Consistent highway volume-time functions
- Identical factors among alternatives (tolls, parking...)
## TEA-21: Final considerations

<table>
<thead>
<tr>
<th>Item:</th>
<th>Useful life</th>
<th>Annualization Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right-of-way</td>
<td>100</td>
<td>0.07</td>
</tr>
<tr>
<td>Structures</td>
<td>30</td>
<td>0.081</td>
</tr>
<tr>
<td>Trackwork</td>
<td>30</td>
<td>0.081</td>
</tr>
<tr>
<td>Signals, electrificacion...</td>
<td>30</td>
<td>0.081</td>
</tr>
<tr>
<td>Rail Vehicles</td>
<td>25</td>
<td>0.086</td>
</tr>
<tr>
<td>Buses</td>
<td>12</td>
<td>0.126</td>
</tr>
</tbody>
</table>
Follow-up studies:

- Two years after revenue operation
- Before-and-after data to evaluate project:
  - Capital costs
  - Operation and maintenance costs
  - System utilization (ridership, O-D, trip purpose, LOS, user profile, demographics...)
  - External factors relevant to the project: gas prices, employment trends...
FHWA does not have to follow an equivalent procedure to that of FTA

Even UK’s DETR induced demand procedure has not become very popular

Any transit project is scrutinized to a point far deeper than any highway project