



Indianapolis  
Metropolitan Planning  
Organization

## Tech Memo III-AA5(b)

### Financial Analysis Methodology

## Indianapolis Metropolitan Area Rapid Transit Study



Prepared By:



Schimpeler/American

In association with:

Shrewsbury & Associates - Paul I. Cripe, Inc.  
Infinite, Inc. - Jacobs Civil, Inc.  
Jakes Associates, Inc. - Barnes & Thornburg  
Manuel Padron & Associates

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## FINANCIAL ANALYSIS METHODOLOGY

### 1.0 INTRODUCTION

A specific requirement of the FTA New Starts program is the development of a Financial Plan by the sponsoring agency, the Indianapolis MPO in this instance. A financial plan begins with a minimum five year financial history of the currently operating transit agency(s), an assessment of its current financial health, and a projection of future revenues and costs. These projections provide the agency with some insight related to financing new capital projects, service improvements, replacement vehicles, and the operation and maintenance of the existing system.

A regional agency considering the implementation of a New Starts rapid transit project must estimate both capital and operating costs for the project over a reasonable time frame such as 20 years. Simultaneously, the agency must project revenues and grants over the same time period. Income that is insufficient to cover project costs will require the development of new and innovative income streams and, in some cases, a reduction in project scope.

An easily updated financial plan that documents the financial capacity of the agency to implement the project is a required element for a New Starts project as the proposal progresses through the several stages of the FTA Planning and Project Development Process. An important tool for developing a financial plan is a comprehensive Cash Flow Model (CFM). A CFM must include:

1. Identification and evaluation of funding sources and revenue forecasts for the current transit system.
2. Capital budget for upgrading the current transit system.
3. Annual operating and maintenance (O&M) costs for the current transit system.
4. Capital costs for the New Starts project.
5. Annual O&M costs for the New Starts Project.
6. Projections of grants and operating revenue for the New Starts project.
7. Projections of new and innovative funding sources.

Early estimates of revenues and costs will be expressed in terms of millions of 2004 “Constant Dollars” over the selected time frame of 20 to 30 years. Cost and revenue data for all categories will be inflated and projections expressed in terms of “Year of Expenditure Dollars.” As the years go by, all cash flow elements will be updated to reflect actual expenditures and revenues as well as revisions to cost and revenue estimates. A cash flow model is an effective tool for:

1. Evaluating alternative routes and technologies.
2. Checking the feasibility of numbers, lengths, and costs of construction phases.
3. Keeping track of projected fund balances and estimating the need for short- and long-term borrowing.

Following are brief discussions of the various elements of the Financial Analysis that will be completed over the next several months.

## 2.0 CURRENT FINANCIAL CONDITIONS

The ITC will obtain at least five years of historical financial data for all expenditures and revenues from the Indianapolis Public Transportation Corporation, the operator of IndyGo, the current transit system serving Indianapolis. Data also will be obtained from the National Transit Database for this time period. These data will be incorporated into the CFM and appropriately projected through the agreed upon time frame for the Indianapolis Region's financial plan.

IndyGo's debt service program for long term bonds as well as for short term borrowing will be determined. Data such as life of bond issues, interest rate, fees, annual debt service, remaining balance, and bond ratings will be included. The amount of other non-bond debt will be determined.

### 3.0 SUMMARY OF REGIONAL ECONOMIC FORECASTS

A reasonable projection of revenue and cost data depends on a number of reasonable assumptions concerning the escalation factors used in the calculation of year-of-expenditure dollars. The ITC will collect the data needed on factors such as: regional population growth rate; rate of return on investments; Consumer Price Index; Construction Cost Index; and long- and short-term borrowing rates. Of particular interest is the question of which growth factors should be used in escalating each revenue and cost stream.

## 4.0 FINANCING STRATEGIES

The implementation of an intermodal transit system requires the integration of existing highways, bus transit, and other transportation modes with all aspects of the RTS including the rapid transit, feeder bus, and background bus components. Integration implies an effective interface such as feeder buses delivering and picking up passengers at a rapid transit station or a bus capable of carrying passengers and their bicycles, and the redeployment of the existing bus transit system to maximize the effectiveness of all transport systems in the Region. An evolutionary process will be devised to gradually transform the current bus system to one which begins immediately to provide enhanced bus service in portions of the seven proposed RTS corridors. While the RTS infrastructure is under construction, express buses will simulate the operation of rapid transit service along the proposed route. As funds permit, more buses will be provided as the evolutionary process is coordinated with the phased construction of the RTS.

Thus, consideration must be given to a short term strategy of financing bus purchases and other capital investments at the time final design of the RTS begins. Other improvements may be necessary as well such as providing access, adjusting signals, etc. This evolutionary process of introducing more effective transit service improvements early on while infrastructure is being built will continue throughout the several construction phases.

Long term financing refers to the commitment of federal, state, and local funds over the 20 to 25 year construction time frame for the rapid transit system. As each phase of rapid transit is completed, the express buses will shift to providing service on other routes. The rapid transit system (RTS), including vehicles, stations, and park and ride lots, will start providing premium rapid transit as well as enhanced bus transit service to the Indianapolis region.

Financing strategies will be considered for contingencies such as unexpected cost increases or funding shortfalls in federal, state, or local revenues.

## 5.0 LOCAL FUNDING SOURCES

Current sources of local funding for IndyGo include fare box revenues, property taxes, state sales tax, advertising revenues, Congestion Management and Air Quality funds, FTA Section 5307 grant funds, and bond proceeds. The ITC will provide estimates of the funds realized from these sources.

## 6.0 PROJECT FUNDING SCENARIOS

The New Starts project will be funded by a small group of funding partners. The principal partner is the FTA which will fund at least half the project capital cost under Section 5309 provisions. However, speculation persists that the upcoming ISTEA funding program will mandate New Starts funding under the originally prescribed 80% FTA and 20% local funding match in accordance with the so-called Level Playing Field Amendment. Consequently, funding scenarios will be run with a 50% FTA match and a higher FTA match between 60% and 80%.

The ITC will consider scenarios involving the choice of RTS technology which includes light rail transit (LRT); automated guideway transit (AGT); and bus rapid transit (BRT) as well as the no-build alternative. The results of the Comprehensive Operational Analysis to be carried out by the ITC will provide estimates of additional buses required to provide efficient express, feeder, and background bus service. Such estimates will be provided for the near-term, short-range, and long-range cases. These estimates will provide the basis for estimating capital and O&M costs for the bus fleet to be integrated with the RTS.

The construction scenario may consist of four 6-year construction phases as agreed to by the ITC and the MPO. The phasing may vary with the choice of RTS technology and with the availability of funds. A shorter construction period generally lowers the cost because several years of cost escalation are avoided. However, in rapid construction scenarios, there may not be enough annual funding capacity either from the FTA or from local sources.

The other major variable concerns the amount of local funds available through the implementation of local-option sales or gasoline tax or some other innovative source. In the CFM in which these scenarios will be studied, an annual funding balance is calculated. A negative balance indicates a fund shortfall. Short-term financing may be used to meet this shortfall if only for a couple of years. If the shortfall persists over the entire study period, an increase in the amount of local funds may be needed. The CFM is able to determine the amount of local tax required to fund the project from both the capital cost and O&M standpoints. Of course, other revenue or grant funds can be revised as well.

The results of these funding scenarios should provide the MPO and the ITC with an understanding of available options and the interaction of various funding and construction strategies.

## 7.0 INNOVATIVE FINANCING OPPORTUNITIES

A substantial portion of New Starts project funding must be developed locally. The ITC will investigate several alternative sources of innovative funding. These include: tax increment financing (TIF); local option sales tax; local option gasoline tax; joint development districts; privatization and franchising options; etc. An estimate of local revenues anticipated from potentially feasible alternatives will be determined. The ITC will investigate other funding opportunities as they come to light.

## 8.0 CAPITAL COST PLAN

The technologies proposed for the rapid transit project element are LRT, AGT, and BRT. Capital costs estimates will be developed for each of these technologies. These initial estimates, with no design involved, will be based on the cost experience of other agencies constructing these technologies order of magnitude cost estimates. These initial estimates will be expressed in terms of millions of dollars per mile and will include facilities, systems and equipment, ROW, engineering, construction management, etc.

The transportation plan for the Indianapolis Region is envisioned as multimodal. The RTS will provide premium service along seven identified corridors extending several miles from downtown Indianapolis in different directions. Buses will travel selected routes in the area of each station to provide feeder service to the rapid transit lines. A second tier of buses will provide background service to outlying areas in the Region.

A capital plan will be developed to purchase these buses and to provide the necessary infrastructure for their operation including park and ride lots at strategic locations. The number of buses required will be determined by the ITC as apart of the COA task. The capital plan will be developed in two parts. The first includes the expenditures for the New Starts project including the rapid transit element, the supporting bus program, and the infrastructure needed to make everything work. The second part is the capital expenditure program for the existing transit system – IndyGo. The sum of these two parts represents the Agency-Wide Capital Program.

## 9.0 O&M COST AND FUNDING SOURCE PLAN

Operating revenues are limited to fare box revenues, fees for bus rentals and other services, and advertising income. Additional O&M funds are derived from the local property tax, the state sales tax, CMAQ operating assistance, and FTA Section 5307 operating funds. As the region's bus fleet expands and the New Starts rapid transit system begins operations, additional O&M revenues must be generated by one or more expanded current sources and through one or more new and innovative sources. The ITC will develop estimates of income from these funding sources.

IndyGo's current fleet of about 130 buses requires current O&M expenditures of more than \$30M annually. As costs escalate, IndyGo's O&M costs will continue to increase. The New Starts rapid transit system will incur additional O&M costs as more than 200 new buses providing express, feeder, and background service come on line. More O&M costs will be incurred as portions of the New Starts RTS are completed and begin service operations. The ITC will develop estimates of O&M costs.

The agency-wide O&M plan will be the sum of the IndyGo and New Starts Estimates of O&M costs just as stated above for the agency-wide Capital Plan.

## 10.0 CASH FLOW ANALYSES

A working CFM will be constructed for the proposed New Starts RTS in the Indianapolis Region. The Model will include: identification and evaluation of current funding sources and revenue forecasts; a capital budget for maintaining and upgrading the current system; annual O&M costs for the current system; capital costs for the RTS including the feeder bus system; annual O&M costs for the RTS and the feeder buses; projections of grants and operating revenues for the RTS project; projections of new and innovative funding sources.

Almost all of the revenue and cost projections mentioned above will be expressed in terms of millions of “Constant Dollars” and then escalated to millions of “Year of Expenditure Dollars.” The data reflecting a proposed funding scenario will be entered into the CFM and calculated. The results of the various scenarios will be documented in tabular form and presented to the MPO.

## 11.0 RAIL BUS INTEGRATION ANALYSIS

The immediate objective of the COA is to provide a cost effective public transportation system for the Indianapolis Region. The first step is to maximize the service of the current bus system. The next step is to add buses and infrastructure in a way which continues to improve operations and to be fully integrated with the fixed guideway transit as it comes on line. See report of Support Study 3.1.1.

## 12.0 RAIL BUS LONG RANGE EVOLUTION

The evolutionary process will allow for the optimization of the current system based on its resources and the service provided. The New Starts program expects to have an optimal system of transportation modes in place about 2030. The evolutionary process will help define the efficient transformation of the optimized current system to rail/bus system proposed for 2030. The several fixed-guideway construction phases will be coordinated with the acquisition of buses and the development of transit-related infrastructure including rail stations, park and ride lots, bus stop shelters, highway improvements, transit centers, and other needed improvements. See report of Support Study 3.1.2.

### 13.0 DETAILED MULTIMODAL FINANCIAL IMPLEMENTATION PLAN

The Financial Implementation Plan (FIP) will be developed to assist in planning the integrated rail/bus system and its evolution, through several construction phases, to an efficient intermodal transportation system. The plan will include the identification of local funding sources as well as potential new and innovative funding sources. The ITC will examine the acquisition of federal support in the form of New Starts funding.

The ITC will gather the data requisite to the seven areas included in the CFM as outlined in Section 1, Introduction. Multiple financial strategies will be considered for both the short- and long-term integrated rail/bus system. Strategies to deal with contingencies and funding shortfalls will be developed. The ITC will examine identified funding sources with regard to legal, political, and feasibility issues and provide an estimate of funding capacity.

The capital and O&M plans will incorporate the proposed RTS, the feeder and background bus systems developed in the COA, and the infrastructure requirements of an operation transit system including items such as transit center, bus stop shelters, park and ride lots, and other amenities. IndyGo's current financial condition will be included in the financial plan.

The outcome of the financial plan is expected to demonstrate the region's financial capacity to implement and operate the entire RTS and enhanced bus operation throughout the nine-County Indianapolis Region. This will be shown in the 25-year cash flow projection of both capital and O&M costs as well as projections of identified revenues to be derived from the funding partners.