



**COMPREHENSIVE FINANCIAL MANAGEMENT  
GUIDELINES  
FOR RURAL AND SMALL URBAN  
PUBLIC TRANSPORTATION PROVIDERS**

**September 21, 1992**

**American Association of State Highway  
and Transportation Officials, Inc.**

**Multi-State Technical Assistance Program**



**COMPREHENSIVE FINANCIAL MANAGEMENT  
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PUBLIC TRANSPORTATION PROVIDERS**

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**September 21, 1992**

**Prepared for the**

**North Carolina Department of Transportation  
Public Transportation and Rail Division**

**American Association of State Highway  
and Transportation Officials, Inc.  
Multi-State Technical Assistance Program**

**U. S. Department of Transportation  
Federal Transit Administration**

**Funding for the development of these financial management guidelines was provided by the General Transit Administration, U.S. Department of Transportation, and AASHTO's Multi-State Technical Assistance Program. Contract administration for the development of the guidelines was performed by the North Carolina Department of Transportation. The United States Government assumes no liability for the contents of this document or its use.**

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# ***INTRODUCTION***

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Financial management is more than maintaining ledgers and financial statements; it is a heads up, eyes open approach to controlling all the financial and nonfinancial resources of an organization to achieve that organization's goals.

This section describes why financial management guidelines are necessary for rural and small urban public transportation providers. It reviews the special challenges facing these operators, describes why financial management is necessary, presents the goals and objectives that led to the development of these guidelines, and outlines the structure of this manual.

■ **Overview**



# **Chapter 1: Overview**

Rural, small urban, and specialized transportation systems operate in environments that pose special challenges. Limited resources, multiple funding sources, and public accountability are among these challenges. Financial management is necessary to manage services so that goals and objectives are achieved efficiently, equitable and accurate bills are prepared for system users, and the expenditure of public funds is documented. The goals of the project through which this manual was produced were to develop comprehensive financial management guidelines especially for the targeted systems, to prepare guidelines with the greatest likelihood of implementation, and to work with state agencies and local transportation providers in developing these guidelines. The manual is structured around seven financial functions and techniques, and is presented in 15 chapters plus appendices.

- **The Operating Environment of Rural, Small Urban, and Specialized Transportation Systems**
- **Why Financial Management is Necessary**
- **Goals and Objectives for these Guidelines**
- **Structure of this Manual**



## **THE OPERATING ENVIRONMENT OF RURAL, SMALL URBAN, AND SPECIALIZED TRANSPORTATION SYSTEMS**

Although publicly-funded transportation services have been available for decades, the kinds of transportation services now being provided in rural and small urban areas are a relatively recent development. The advent of public funding for large urban transit systems in the mid-1960s also led to questions concerning public responsibilities for transporting persons in rural and small urban areas. In the early 1970s, specialized services for elderly and disabled persons were recognized as worthy of attention and, in 1978, the Section 18 program for public transportation in non-urbanized areas was begun.

The shift from private to public funding for public transportation services in rural and small urban areas, and the subsequent creation of many new transportation systems, has created a need for accountability in the operations, and, in particular, the finances of these new systems. But many of these systems are not particularly well-equipped to understand or produce the kinds of accountability desired. This is because of characteristics which are typical of the local environments, the transportation operations, and the transportation staffs. (Your own situation may differ to some degree from the following descriptions, but you may also see some of the issues you face daily in these words.)



### **Local Environments and Their Effects on Successful Transit Operations**

Many rural and small urban areas across the U.S. are now faced with declining populations. Even in areas that are not facing population declines, rising costs of public services have created serious fiscal problems for localities and other conditions have created additional service needs. With regard to public transportation, these conditions include:

- proportionally higher incidence levels of elderly and disabled populations,
- proportionally higher incidence levels of low-income persons,
- declines in long-distance rail, air, and bus services in recent years, and
- a society that is increasingly dependent on auto travel, widening the gap between those who have access to an auto and those who do not.

There are large differences between successful rural and small urban transportation systems and their counterparts in large urban areas. What works well in large urban areas will not always work well in rural or small urban areas due to the dispersion of origins and destinations, the overall low density of demand, the different characteristics of those persons who depend on public transportation for their mobility, the

nature of the trips demanded, and the lifestyles and characteristics of rural and small urban residents.

Successful rural and small urban transit systems have applied common sense rules regarding **financing** (recognize limitations on funds; multiple funding sources required), **objectives** (focus on limited but achievable objectives), **services** (innovate with the most expensive trips; try to establish a stable base of regular riders; tailor services to specific local needs); and **implementation** (devise appropriate roles for all service providers, both public and private).

## ***The Transportation Operations***

The transportation operations serving these communities are usually small. According to a 1989 survey, the average number of vehicles operated by Section 18-funded systems was less than nine and the average for Section 16-funded systems was just under six. This means that a typical operation will serve less than 100,000 trips per year with an annual budget of around \$200,000, employing ten drivers or less and two to four administrative staff members.

Especially in rural areas, the transportation systems may have only recently initiated services. They probably recover a fraction of their costs from the farebox, and many have little local governmental financial support. Many rely on federal transportation dollars (such as USDOT and USDHHS funds) for capital and operating expenses. (Administrative expenses are considered to be a subset of operating expenses.) They will typically provide services under contract to a variety of human service agencies and their clients, thus creating a condition of multiple sources of funding (each requiring its own reports).

## ***Transportation Staffs***

The average rural or small urban transportation system has a small staff, as noted above. They are sometimes overworked and often underpaid: typical salaries for the director or administrator range from \$20,000 to \$40,000 per year (in 1990), although both higher and lower salaries are possible. The directors tend to perform a multiplicity of jobs, including driving vehicles on occasion. It is rare that any person on the administrative staff will perform a single duty -- such as fiscal officer -- so the norm for the industry is good generalists instead of good specialists. Turnover tends to be fairly frequent, increasing the need for good records and good instructions for performing required tasks. Unfortunately, good records and good



## **Implications for Financial Management Guidelines**

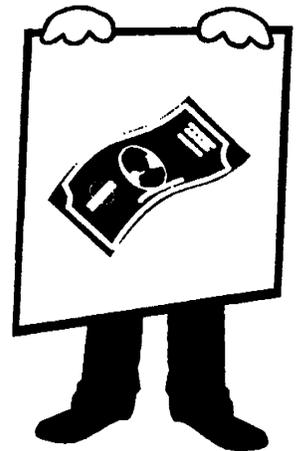
## **WHY FINANCIAL MANAGEMENT IS NECESSARY**

instruction are not always available for someone just entering a transit position.

The financial guidelines in this manual will not, in most cases, be implemented by accountants. Typically, the persons responsible for filling out the forms and producing the required bills and reports will have only on-the-job training in accounting or fiscal management. The transportation systems they administer may not deal with million-dollar budgets, but they will need to account for funds from a wide variety of sources. These conditions demand that the financial guidelines be comprehensive yet simple, easy to delve into on a part-time basis with little prior training. Procedures need to be straightforward and clearly explained. They also need to respond to the requirements of a variety of agencies.

Transportation systems need complete and accurate financial data in order to:

- manage the system so that its goals and objectives are met efficiently,
- know the true cost of operating the system so that costs may be billed or allocated appropriately to the system's users,
- report to the funding sources or purchasing agencies (including potential money lenders) how money was spent, what revenues were realized, and the financial status of the organization.



The accounting function allows an organization to fulfill these objectives by producing two outputs:

- **the income statement**, a summary of the revenue and expenses of the transportation provider for a specific period of time. This statement is important for billing and allocating purposes since billing and allocation are based on expenses (minus subsidies). In addition, the income statement will be used in reporting to the system's funding sources, accounting for the funds that have been received.
- **the balance sheet**, a statement of the net financial condition of the transportation provider at the end of a fiscal period. The balance sheet shows the assets, liabilities, and capital of the organization. The balance sheet includes the net balances at the end of the period for each of the assets, liabilities, and capital object classes (unlike the income statement which uses the total expenses and revenues for the period). The balance sheet is an essential part of the financial management of the transportation

## **GOALS AND OBJECTIVES FOR THESE FINANCIAL MANAGEMENT GUIDELINES**

system and it is necessary when the organization is audited by its funding sources.

The organization for the accounting system is provided through a **chart of financial accounts**. The chart of accounts provides a uniform and systematic way to record the information necessary to produce the income statement and balance sheet, as well as the additional records needed for reporting to various funding sources. It lists accounts (records of similar transactions), systematically arranged according to assets, liabilities, capital, revenue, and expenses. The recommended Chart of Accounts is presented in Appendix A.

Given the complexity and unique nature of rural and small urban transportation systems, Multi-State Technical Assistance Program (MTAP) states identified a need to develop a comprehensive set of procedures that address a wide range of financial management issues. Due to human resource limitations, the procedures needed to be straightforward to facilitate understanding and comprehension among persons not trained in financial management. Finally, in recognition that turnover rates may be higher among those existing staff positions with financial management responsibility, MTAP identified a need to develop these guidelines as a reference manual. MTAP sought and received financial assistance from the Federal Transit Administration of the U.S. Department of Transportation to fund the development of these guidelines.

To meet these needs, the following goals and objectives were established for this project by MTAP's Project Advisory Committee (PAC). (Members of the Advisory Committee are identified in Appendix B.)



The first goal of this project was to develop comprehensive financial management guidelines which address the unique characteristics of rural and small urban transit operations and specialized paratransit systems. This goal was to be accomplished through the following objectives:

- Identify critical accounting functions which are common to rural, small urban, and specialized transportation systems;
- Address specific issues and concerns related to financial management that are unique to rural and small urban operations;

- Conduct a comprehensive review of previously published financial management systems and descriptions of fundamental accounting principles;
- Determine systems currently in use by MTAP states and assess their design, then use this information to design the guidelines with the least amount of conflict in implementation;
- Develop a manual which will build upon existing work products;
- Produce guidelines based on the Transportation Accounting Consortium's (TAC) Chart of Accounts that can be used under a variety of circumstances;
- Cover, in detail, a wide variety of assigned subtopics;
- Develop guidelines for collecting data which are useful for both financial and performance analyses; and
- Produce guidelines which will improve the financial management skills of transportation operators.

The second goal of this project was to develop comprehensive financial management guidelines which ensure the greatest likelihood of implementation by state public transportation agencies and their local transportation providers. This goal was to be accomplished through the following objectives:

- Incorporate suggestions and recommendations by the PAC;
- Prepare a manual that is usable by persons with no formal financial management training and with limited time to address financial management responsibilities;
- Produce a manual which will be used by incorporating style, graphics, and presentation of detailed and comprehensive information in the most appropriate and appealing format;
- Establish a strong and legible structure, outline, and indexing system that allows a system operator to quickly access and understand specific topics;
- Develop an effective and thorough implementation strategy which identifies all potential and practical resources required;
- Prepare the final product with the assistance and direction of the PAC for presentation at the Federal Transit Administration (FTA) Project Managers Meeting on August 9-11, 1992 in Washington, D.C.



The third goal was to work with a Project Advisory Committee of five member states, their designated local transportation providers, and the MTAP National Technical Assistance Coordinator to prepare all products of this project on time and within budget.

## **STRUCTURE OF THIS MANUAL**

This manual is structured around **functions** and **techniques** that are relevant to the financial management of transportation services. The major functions and techniques become sections of the manual and chapters are the detailed subsections of each function or technique.

### **Major Functions**

The major functions that will be discussed are financial planning, cash management, and monitoring and analysis. Associated with each of these functions are **strategies** and **processes**. For example, setting prices is a strategy under the general heading of financial planning, and invoicing is a process that augments the strategy.

### **Financial Planning**

Two of the most basic questions in financial planning are

- **How much will the service cost? and**
- **How will the costs of the service be paid?**

Before addressing these questions, it is necessary to quantify the level of service that will be provided; therefore, this section begins with a chapter on service planning. Service planning should be continuous; major reviews should be performed regularly (at least annually) or whenever external conditions change significantly. The best financial planning is performed through what is called an "iterative" process: a sequence of setting goals, specifying plans, evaluating probable results, and then making adjustments is repeated, with further refinements as each repetition is made, until a series of tests and retests shows that the transportation system's goals and objectives can be met efficiently and effectively by the plan. [Note: the term "iterative," which is used throughout this manual, is explained in detail in Chapter 2.]

All sources of revenue are discussed. For ease of understanding, they have been grouped into four categories: 1) fares, 2) agency contracts, 3) grants and other governmental payments, and 4) other

sources. The major cost categories to be addressed are capital costs and operating costs. (Administrative costs are a subset of operating costs.) The budgeting chapter concludes the financial planning section.



**Cash Management**

This section deals with three key areas of operations control: revenue security, deposits, and cash flow. These need to be continuous activities.

**Monitoring and Analysis**

These are activities that have long-term horizons and may not be performed on a daily basis. They can be termed financial controls. They will include monitoring performance (service outputs as well as resource inputs), auditing (securing audit services and evaluating the audit report), financial reporting, including grants management, and the analysis of actual versus expected costs, sometimes called variance analysis.

**Techniques**

**Accounting Fundamentals**

For those individuals who are unfamiliar with accounting fundamentals, the first technique section reviews both financial and non-financial accounting procedures and terminology.

**Cost Allocation Procedures**

Cost allocation procedures are discussed from two major perspectives: how costs are incurred (for example, which costs are variable according to the amount of service provided and which are fixed) and how specific costs can be ascribed to certain services or accounts (for example, towns in a region or specific human service agencies).

**Typical Costs for Rural and Small Urban Transportation Providers**

The typical costs section provides benchmarks (cost ranges) for providers to use as one gauge of their relative performance.

**Overall Outline**

This Section has presented an overview of the entire financial management guidelines. The outline for this manual is shown in Table 1-1 on the next page. Sections II through IV contain discussions of the financial management functions:

- financial planning,
- cash management issues, and
- monitoring and analysis.

Sections V through VII contain discussions of the financial management techniques:

- accounting fundamentals,
- cost allocation procedures, and
- typical costs.

Please pay close attention to Appendix A, the Recommended Chart of Accounts.

Table 1-1

OUTLINE OF THE FINANCIAL MANAGEMENT GUIDELINES

Section I: Introduction

**Chapter 1: Overview**

Section II: Financial Planning

**Chapter 2: Strategies and Services**

**Chapter 3: Revenues**

**Chapter 4: Costs**

**Chapter 5: The Budget Process**

Section III: Cash Management Issues

**Chapter 6: Revenue Handling**

**Chapter 7: Cash Management**

Section IV: Monitoring and Analysis

**Chapter 8: Financial and Performance Reporting**

**Chapter 9: Audits**

Section V: Accounting Fundamentals

**Chapter 10: Financial Accounting**

**Chapter 11: Performance Evaluation**

Section VI: Cost Allocation Procedures

**Chapter 12: Cost Allocation Model Development**

**Chapter 13: Cost Allocation Applications**

Section VII: Typical Costs for Rural and Small Urban  
Transportation Providers

**Chapter 14: Typical Costs for Rural and Human Service  
Transportation Providers**

**Chapter 15: Typical Costs for Public Transportation Providers**

**APPENDIX A: Recommended Chart of Accounts**

**APPENDIX B: List of Project Advisory Committee Members and  
Reviewers**

**APPENDIX C: Annotated Bibliography**

# ***FINANCIAL PLANNING***

Financial planning identifies needs, develops managerial strategies, helps make the best use of limited resources, helps reduce uncertainty, and may even help educate both public officials and the general public. It is based on strategic plans, goals, and objectives that include both short-range (1-2 years) and long-range (3-5 years) objectives. Service plans must include what transportation services will be delivered, how they will be delivered, when, to whom, and at what cost. Full cost accounting is explained, with total costs derived from the summation of individual components. Budgets are required to receive and manage funds; several budgeting strategies are discussed.

- **Strategies and Services**
- **Revenues**
- **Costs**
- **The Budget Process**



# **Chapter 2: Strategies and Services**

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The first steps in financial planning, before dollars or hours or vehicles are considered, are establishing a strategic plan and goals and objectives. Factors to consider are the overall financial, political, and community environments, existing used and unused resources, and needs and demands within the community. All these lead to a plan of action, the service plan. Once the service plan is made, it must be reviewed for feasibility in terms of costs and funding. Several iterations of the review process may be necessary before a balance between goals and objectives, services, costs, and funding is achieved.

- Overall Strategies and Goals
- Service Planning
- Iterative Reviews
- Conclusion



## **OVERALL STRATEGIES AND GOALS**

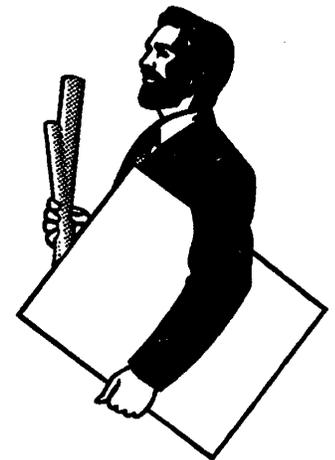
Financial planning begins by establishing (or reaffirming) overall strategies and goals. Small urban and rural public transportation providers need first to state their mission. Write it down so that you can explain your mission to others, particularly your local elected officials -- what you are trying to do, why you are trying to do it, and how you plan to proceed. This starts the financial planning process.

(Information in this section is summarized with modifications from the following source: Indiana University, Institute for Urban Transportation, Financial Management for Transit Handbook, Urban Mass Transportation Administration, April 1985.)

Financial planning identifies needs, develops managerial strategies, helps make the best use of limited resources, helps reduce uncertainty, and may even help educate both public officials and the general public. A good financial plan must meet the needs of the present; however, it should also be prepared with an eye to the future development of the community and the transportation needs of the public. With long-range (3-5 years) considerations in mind, the strategic plan is the ideal starting point for the development of the financial planning process.

### **Strategic Planning**

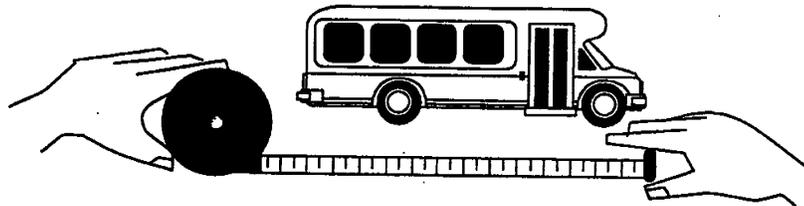
Strategic plans may arise from the wishes of transportation policy makers (usually, the Board of Directors) to look beyond immediate needs. Capital investment is often the inducement for strategic planning. Equipment and machinery wear out; buildings and other fixed facilities must be maintained. Policy-makers may raise questions about heavy maintenance or capital replacement needs, or new capital purchases, over the next three to five years, or even longer. But a strategic plan is much more than capital investment; it is the "vision" of how public transportation can support and enhance the economic, social, and environmental fabric of community development -- the quality of life. Strategic planning integrates present and future public needs with operating and capital investment decisions about public transportation service.



The strategic planning process begins with an analysis of the environment in which the transportation system exists. This should include an assessment of the risks and opportunities that may lie partially hidden in both the near and more distant future. For instance, there would be a danger to continued service if the federal, state, or local government diminishes its support for public transportation. On the other hand, strong commitments to community redevelopment may be a good opportunity for transportation. Renewal is the sort of venture with which transportation can be closely identified and in which transportation may play an important role.

A key task in developing the strategic plan is framing the plan's basic assumptions. Assumptions such as the continuation of certain levels of fiscal support, growth patterns in the community and region as it will affect the transportation operations, geographic expansion, or a reduction of service because of an expected decline in population or community activity significantly influence potential transportation options.

An assessment of the current condition of the transportation system should be made. This includes an assessment of the people and material resources that are available to carry out required tasks. The assessment should include current needs and also future needs and directions. While the future is uncertain, some things are rather clear: Employees are the most important resource of the transportation organization. The need to ensure quality service through continuous training and education for self-improvement and increased responsibilities is vital. Replacement of buses or vans on a regular pattern is relatively easy to determine based on the economic life of equipment. The single most important task for the transportation system to assess is how its performance is viewed from the outside -- its public image and customer satisfaction.



Strategic planning is also an analysis of the market potential for transportation system use. This includes an estimate of future travel demand as affected by prospective community changes. The range of potential events should be considered as accurately and as far as possible into the future, including community development and redevelopment efforts in which public transportation should play a role. Typical of such efforts are public transportation service integration with downtown malls, transportation centers, senior citizen activity centers, health care and medical facilities, and industrial parks.

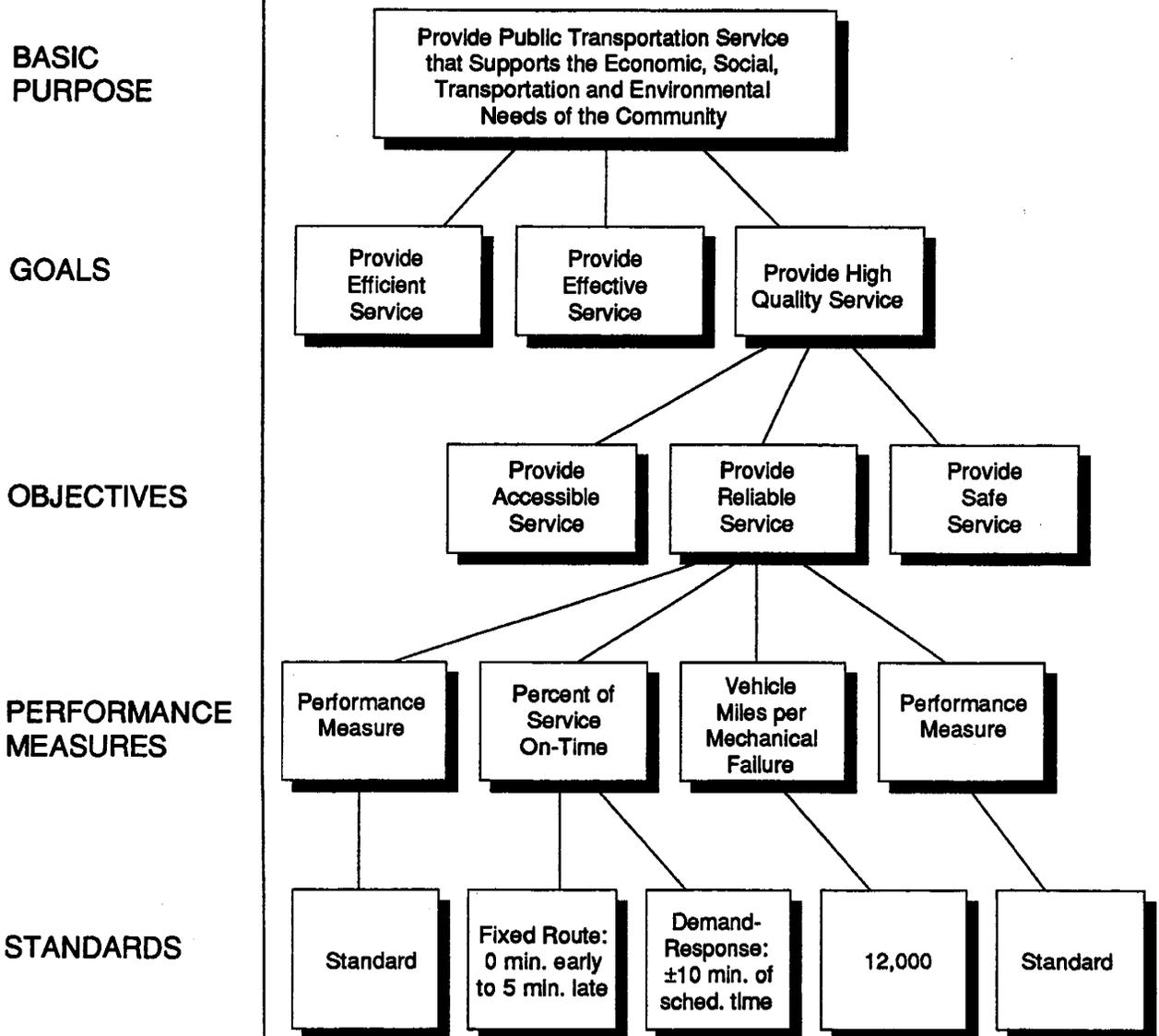
## **Goals and Objectives**

From strategic planning comes the development of transportation goals, a process which should consider all people, groups, and jurisdictions that will be affected. In developing goals, it should be remembered that transportation goals, per se, are rarely an end in themselves but, rather, a means to achieving broader personal and community economic, education, social and environmental goals. Therefore, transportation goals may be thought of as supporting "the way things should be."

A system of transportation goals, objectives, performance measures, and standards provides a framework for both designing and evaluating existing and proposed services. A goal is a statement of an ideal end, and is used to establish policy and determine organizational direction. An objective is a step toward the achievement of a goal, and should therefore be stated so that its attainment can be measured. A performance measure is generally a quantitative measurement of the degree to which an objective has been attained. A standard specifies an acceptable or desired level of achievement of an objective, generally through a numerical value. It provides a clear-cut point for designing service and evaluating performance -- either a standard is met or it is not. Examples of how goals, objectives, performance measures; and standards tie together is shown in Figure 2-1.

Figure 2-1

EXAMPLES OF THE RELATIONSHIPS OF GOALS AND OBJECTIVES TO PERFORMANCE MEASURES AND STANDARDS



The goals of the transportation system should not be developed in isolation. In formulating goals, input should be sought from the public, elected officials, community leaders, and the governing board of the transportation system. Goals will be affected by the values and priorities of the community.

After goals, objectives, performance measures, and standards have been established, planning the transportation service is the next step. In some cases, planning means making adjustments or modifications to improve existing passenger service as well as to address changing community travel and development patterns. In other cases, it means adding new services and/or discontinuing elements of existing services. Contracts with human service agencies may require changes to better serve elderly and disabled persons, or a new industry may move to the area, necessitating changes to public transportation service routes and schedules.

## ***SERVICE PLANNING***

Public transportation systems must continuously plan for the efficient and effective delivery of services. Existing systems must decide whether service(s) are to remain the same or whether new and/or adjusted services will be offered. New systems must determine what service(s) will be provided, how they will be delivered, when services will be offered, and what price will be charged to passengers. Service planning determines the operations, maintenance, administrative, and capital requirements of the public transportation system based on adopted goals and objectives. These requirements are essential for competent financial planning and budgeting.

There are seven key elements of a public transportation service plan. These elements are service modes, service availability, organizational and institutional context, service pricing, personnel and labor requirements, rolling stock, and other capital requirements. This section outlines fundamental elements of a service plan which must be developed and detailed in order to effectively estimate revenues and costs.

## ***Service Modes***

There is a wide range of service modes to meet public needs, ranging from regular transportation routes with schedules and stops to subscription bus service with check-stops to demand-response services to taxi, jitney, and auto service. Four basic types of service modes may be considered based on community size, level of activity, population and employment (size, density, and location), and special service needs (including the elderly and disabled, human service agency clients, and students). Generically, these service operation types are:

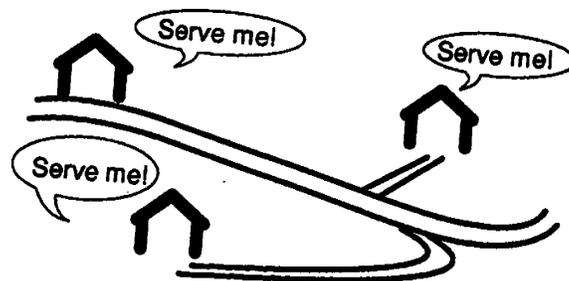
- fixed route, fixed schedule (traditional small urban or urban bus service)
- variable route, fixed schedule (route deviation service),

- variable route, variable schedule (demand-response, paratransit service), or
- no specific routes or schedules (taxi service).

## ***Service Availability***

Clustering and proximity of high-density residential and activity locations and trip-making patterns for work, shopping, school, and medical services are key determinants of the type or types of service which best meet personal and community travel needs. Small urban and rural transportation systems often use a combination of service modes to meet the diverse needs of their passengers and customers.

The location, span, and frequency of service are key factors in meeting the transportation needs of the public. Route and stop locations of fixed route service determine its general availability to the public. Traditionally, passengers having to walk distances of a quarter-mile or less from the route and stop location at either end of the bus trip are considered to be in the service coverage area. Variable-route service provides greater flexibility in coverage but the total service area should be firmly established.



Careful attention must be given to the days and hours when service is operated because this span helps define who may or may not use the service. If special services such as paratransit or taxi services for designated users are being considered, response time to passenger requests and reservation policies must be assessed to estimate the level of service required and its impact on operational resources such as vehicles and drivers.

In addition to service location and span, the frequency of fixed route service must be determined on a route-by-route basis since high-frequency service results in higher labor and capital expenditures and, potentially, higher levels of ridership. When demand-response service is considered, the level of service availability and response time must be determined since these factors also affect resource requirements. If the demand is estimated to be greater than the service can accommodate, then service availability constraints should be established, at least in terms of on-time performance and seat availability.

All service availability elements of the plan should be designed in the context of service quality standards. As previously discussed, service standards provide performance benchmarks whose attainment

supports adopted goals and objectives of the transportation system. For example, a fixed route service standard may establish a 60-minute maximum headway between all buses operating in one direction. This standard would be a benchmark of the performance measure that is used to assess the attainment of the **Service Frequency** objective supporting the adopted **Service Availability** goal. (See the previous section on Goals and Objectives.) While there are some general "dos and don'ts" used in the public transportation industry that are based on experience, each system must consider the numerical value of each standard against the needs of its own community.

The adoption of service quality standards may have a profound impact on the ability of the transportation system to attain other standards that support efficiency and effectiveness goals. For example, establishing 20- or 30-minute headways on a fixed route system or operating a demand response service with service spans of 15 hours on weekdays may cause the operating cost to increase disproportionately to the number of passengers, resulting in costs per passenger higher than the established standard. But that's okay if that is what the community wants and will fund.

Service planning must also weigh relationships between organizational ownership, operations, and sponsoring agencies. Since the cost of public transportation service is normally greater than the revenues from passengers, the system will require operating and capital funds from governments. The amount of government support is often uncertain and, therefore, service planning must develop flexible concepts and operations. Coalitions of support within communities are necessary to sustain or increase public funding.

The service plan must consider potential sources of non-user revenue funding and what obligation non-user support places on the character of the plan. If local government is a sponsor of public transportation through general tax-based revenues, must service be provided to all areas of the community? If a private sector organization became a financial sponsor, what level of service shall be provided? If service is provided under agreement to a human service agency, how does such an obligation impact the service infrastructure?



There is no one answer to the basic question of which persons should be served or to the three more specific questions posed above. While many local governments serve only a portion of the persons residing within their political jurisdiction, other local governments have decided that, if all citizens pay taxes to support transportation services, then all citizens should be able to receive transportation services. When a

## **Organizational/ Institutional Context**

private (for example, charitable) organization provides substantial funding for local transportation services, it may insist that certain individuals or agencies receive priority treatment. This strategy has been acceptable to some local governments and problematic for others. Human service agencies often key their services to particular clientele. If substantial public support is offered, they may be willing to expand their services to other persons; their level of willingness to expand those served may determine the acceptability of using such an agency as the community's transportation providers. It is important to identify such issues for local decision-makers so that they can make intelligent choices that explicitly address the needs and values of their own locality.

## ***Service Pricing***

The pricing of transportation service or establishing fare policies and structures must be considered in the development of a service plan, because it influences both the level of ridership and revenue. The approach to service pricing is complex because it involves estimating potential passenger response to trade-offs between service quality and service cost. This tradeoff is known as service and price elasticity.

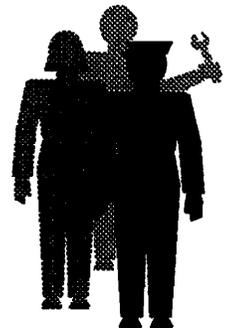
Compounding the complexity of pricing transportation service is the level of financial assistance which might be available from both the public and private sector to support transportation. The question of how the cost of service might be financed through various user and non-user revenues may be viewed from several philosophical, economic, and social perspectives. These perspectives involve how users and non-users might contribute to pay for service. Contributions might be made on the basis of:

- use,
- cost to provide,
- benefits received, or
- ability to pay.

Each of the above perspectives or concepts has merit for contributing revenue in support of public transportation service. While each concept has associated pros and cons, managing and administering the collection of revenues often play a major role in the selection of the final pricing structure. Most transportation systems use one or more of the concepts to support the cost of transportation service. For additional information on pricing, see Chapter 3.

## ***Labor Requirements***

The service plan must consider the human resources needed to operate the system. The largest cost element of transportation services is driver labor. If the service is to be operated by a third party, then the cost of labor should be included in the total price for providing service. If the service is to be provided by a public organization, then the personnel requirements for operating, maintaining, administering, and managing the service must be



# **Chapter 4: Costs**

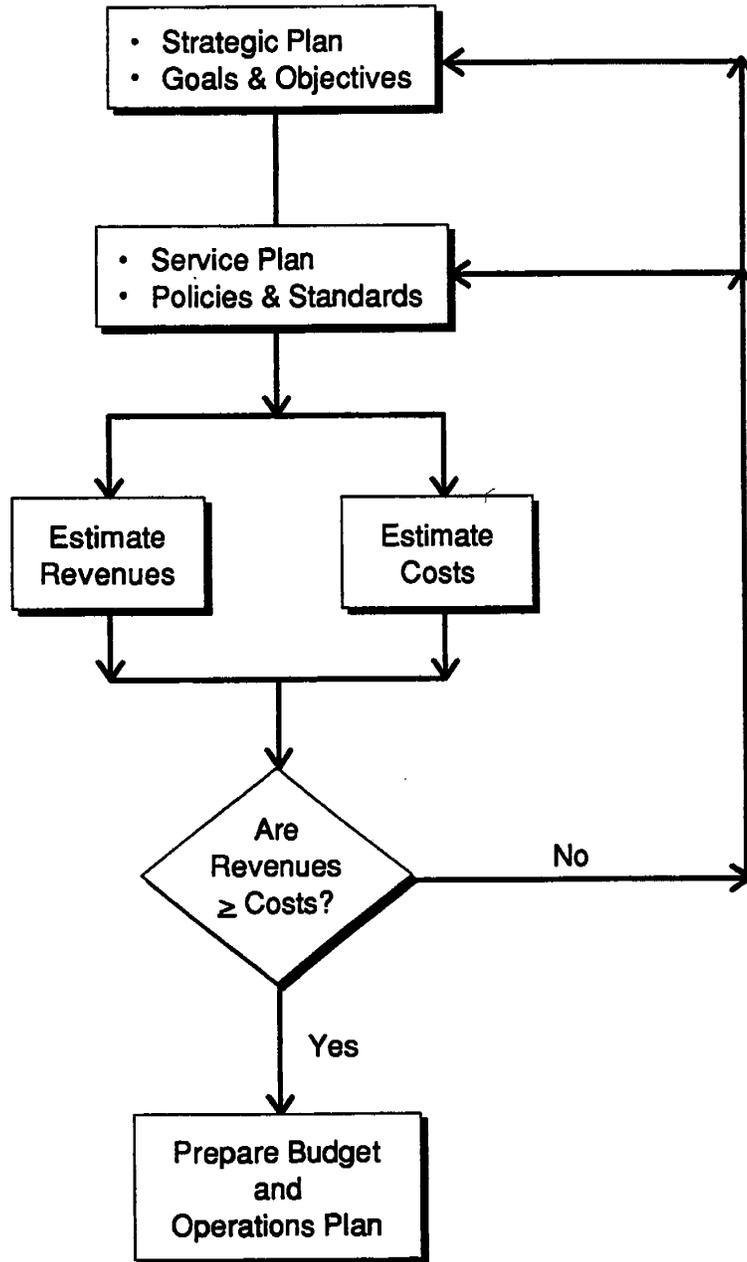
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Rural and small urban transportation system managers must understand costs to conduct effective financial planning. They must ensure that the total costs of providing transportation services are considered in their plans. The recommended costing method is called full cost accounting. The approach includes total transportation costs and requires an understanding of basic cost concepts, including adjustments for the effects of inflation and assigning appropriate values to contributions of time or materials.

- **Introduction**
- **Basic Approach**
- **Basic Cost Concepts**
- **Special Considerations**
- **Conclusion**

Figure 2-2

THE ITERATIVE PLANNING PROCESS





# **Chapter 3: Revenues**

While fares may be a small portion of the total revenues of rural and small urban transportation, they can be vital to the system's health. Contracts with local agencies can bring in significant revenues. Grants are probably the most important source of funding for public transit systems. Additional income can sometimes be earned by properly investing any excess cash available. Another source of revenue that may apply to some smaller transportation operations is the sale of advertising space.

- Fare Revenues
- Contract Revenues
- Grants
- Investments
- Advertising
- Conclusion

## FARE REVENUES

Fares are the monetary amounts that riders pay to use the transportation system. They may be a relatively small portion of the revenues of rural and small urban transportation systems. Some operations recover less than 10 percent of their operating expenses from the farebox; it is extremely unusual for any rural or small urban system to recover more than 50 percent of its operating costs from fares. Nonetheless, even a small percentage of contributions can be vital to the system's fiscal health and even its continued existence.

Receipts from fares should also be seen as a crucial source of information, as they reflect the demand for the service and can be used to influence ridership patterns (e.g. lower off-peak fares encourage more people to ride off peak) and to control demand. Three aspects of your transit system's fare policy can be changed to increase fare revenue (or achieve other desired outcomes such as increased ridership, peak trips diverted to off-peak, etc.):

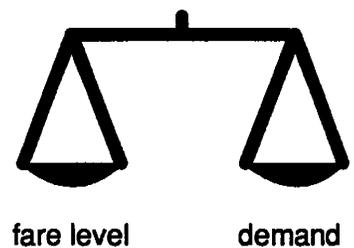
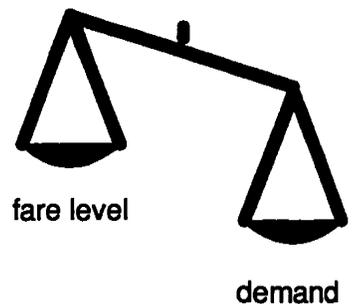
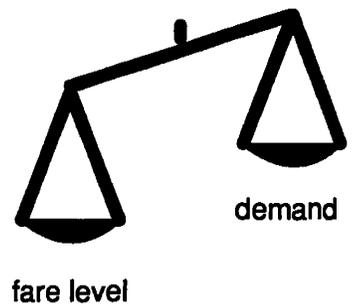
1. the fare level,
2. the fare structure, and
3. the fare collection method.

### The Fare Level

The demand for any transit service (expressed by the number of trips taken) is dependent to some extent on the level of the fare charged. In general, if all other conditions are equal, the higher the fare, the lower the demand. (The next page discusses the relationship between fares and numbers of riders in more detail.)

If your goal is to maximize your fare revenue, your challenge is to find the fare level which will yield the highest total revenue. Should you charge a low fare and attract a higher number of riders or charge a high fare and attract few riders? For example, if when the fare is \$0.50 the demand is 120 trips per day (resulting in \$60 of revenue per day), and when the fare is \$1.00 you get 80 trips per day (\$80 per day), and at \$2.00 you get 20 trips per day (\$40 per day), then \$1.00 is the optimum fare in terms of revenue generation.

You may wish to base your fares on a desired farebox recovery ratio. To determine the appropriate fare, multiply the desired ratio by the average cost per trip for the type of service in question. For example, if one of your system's objectives is to recover 20 percent of the costs of transportation services from farebox revenues, and your average cost per passenger carried is \$2.50, you must charge a minimum fare of \$0.50 per trip (20% of \$2.50) to achieve your objective. The



amount of fare, of course, will affect the demand for the service and the level of demand affects the number of trips provided and thus the cost per trip. As you can see, this type of fare determination calls for a delicate balance of fare level with desired demand.

## **Fare Increases**

Sooner or later, you may need to raise your fares. As a transportation system increases its fares, it may often lose riders. Similarly, if a system lowers its fares, it should attract more riders. But the lowest possible fare -- free -- may not attract more additional riders than a fairly low fare that still produces revenues that are significant for the transportation system. (This is because free services are often not valued highly by consumers; if some payment is required, the intrinsic value will have the appearance of being greater.)

Economists use the concept of "**fare elasticity**" to measure how sensitive the **demand** for a trip provided by a transportation system is to its **price**. For large urban public mass transit systems, there is a significant body of literature documenting fare elasticities under varying conditions; unfortunately, no similar summary of knowledge is available for rural and small urban transportation systems.

The amount by which the demand will drop as the fare increases will be different for each transit system depending upon a number of factors, including the type and quality of service available, the local economic conditions, and any alternative transportation services in the area. In rural areas where no transportation alternatives exist and a high percentage of the population may depend on transit, a transit system can raise its fares to some degree with little drop in demand because the riders are not "choice" riders -- they have no other transportation alternatives.

Studies on fare elasticities of transportation services indicate that your ridership is likely to decrease from one to four percent if you increase your fares by ten percent. Alternatively, you can estimate your fare elasticity by analyzing the results of your past fare increases, using the experiences of similar systems, or asking the advice of your state DOT.

Remember that changing fares is a process that involves lots of politics as well as economics; therefore, you may not want to go through this process often. One strategy for avoiding frequent increases is to set fares high enough initially (and raise them enough when they are raised) to receive sufficient farebox revenues.

## **The Fare Structure**

There are different kinds of fare structures, each with its own strengths and weaknesses. This section presents each of the options. Table 3-1 summarizes the basic alternatives for fare structures, including their basic features, possible fare types or categories found within each, kinds of systems which commonly use this type of fare, and the advantages and disadvantages of each type of fare. Three of the alternatives (Time-Based Fare, Special User Fares, and Transfer

Charges) are called "secondary options" since they can be used in conjunction with one of the three "primary" alternatives (Flat Fare, Distance-Based Fare, and Quality-Based Fare). In fact, it is possible to have a fare structure incorporating several alternatives. However, the more alternatives in your fare structure, the more difficult it will be for users to understand and the more complex and costly for you to implement.

## **Primary Alternatives**

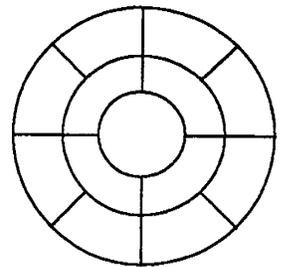
### **Flat Fare**

Flat fares are by far the easiest for the passenger to understand and least costly for the transit system to implement. The same fare is charged for all trips regardless of distance traveled, time of day the trip is taken, or service quality. Flat fares are commonly used by small urban systems where geographic area of coverage is limited.

### **Distance-Based Fare**

Distance-based fares vary according to the distance traveled per trip. There are essentially two ways of charging users according to the distance traveled:

- Charging a per-mile (or per group of miles) rate: This method works well for demand-responsive services which are not rideshared (an example would be one passenger riding in a taxicab).
- Charging a per-zone rate: A zone structure is superimposed on a map of the service area, and the price of each trip depends upon the number of zones crossed. Zone boundaries can be defined by geographic areas (such as concentric circles, most commonly used in urban areas), key stops along a route, a grid system (the most complex to administer), or a hybrid of these.



EXAMPLE OF GEOGRAPHIC ZONES AROUND A DOWNTOWN AREA

Shared-ride demand-responsive systems and large urban systems or long-distance commuter systems often use a distance-based fare structure. A distance-based fare structure is often the most equitable system of charging for service; it can also maximize revenue. However, it can be complex from both the transit system's and rider's perspectives.

### **Quality-Based Fare**

Quality-based fares are useful when a system offers services of different levels of quality, such as:

- local and express service -- express service is quicker for long-distance riders,
- curb-to-curb and door-to-door service -- door-to-door service provides extra, personal assistance, and
- fixed route and demand-responsive service -- demand-responsive service is often tailored to the convenience of the user.

Table 3-1

FARE STRUCTURE ALTERNATIVES

Fare Structure	Basic Features	Possible Fare Types or Categories	Kinds of Systems Which Commonly Use this Structure
<b>PRIMARY ALTERNATIVES</b>			
Flat Fare	One fare for all trips		<ul style="list-style-type: none"> <li>Small urban systems</li> </ul>
Distance-Based Fare	Fare depends on distance traveled	<ul style="list-style-type: none"> <li>per mile</li> <li>per zone</li> </ul>	<ul style="list-style-type: none"> <li>Larger urban systems</li> <li>Systems serving broad geographic area</li> <li>Demand-responsive systems</li> <li>Commuter systems</li> </ul>
Quality-Based Fare	Fare depends on the quality of the service provided	<ul style="list-style-type: none"> <li>local/express</li> <li>curb-to-curb/door-to-door</li> <li>fixed route/demand resp.</li> </ul>	<ul style="list-style-type: none"> <li>Systems offering services of different levels of quality</li> </ul>
<b>SECONDARY ALTERNATIVES</b>			
Time-Based Fare	Fare depends on the time when the trip is taken	<ul style="list-style-type: none"> <li>peak/off-peak</li> </ul>	<ul style="list-style-type: none"> <li>Urban systems</li> </ul>
Special User Fare	Fare depends on characteristics of the user	<ul style="list-style-type: none"> <li>aged 60+</li> <li>aged &lt;5</li> <li>disabled</li> <li>student</li> </ul>	<ul style="list-style-type: none"> <li>All types of systems</li> </ul>
Transfer Charge	Additional charge for transfers made	<ul style="list-style-type: none"> <li>per transfer</li> </ul>	<ul style="list-style-type: none"> <li>Urban systems</li> </ul>



Table 3-1 (continued)

Fare Structure	Advantages	Disadvantages
<b>PRIMARY ALTERNATIVES</b>		
Flat Fare	<ul style="list-style-type: none"> <li>· Simple to implement and understand</li> </ul>	<ul style="list-style-type: none"> <li>· Inequitable for trips of shorter distance or lower quality</li> <li>· Not best means for maximizing fare revenue</li> </ul>
Distance-Based Fare	<ul style="list-style-type: none"> <li>· Equitable</li> <li>· Maximizes revenue</li> </ul>	<ul style="list-style-type: none"> <li>· Complex to understand and implement</li> </ul>
Quality-Based Fare	<ul style="list-style-type: none"> <li>· Equitable</li> <li>· Maximizes revenue</li> <li>· Simple to implement and understand</li> </ul>	<ul style="list-style-type: none"> <li>· none</li> </ul>
<b>SECONDARY ALTERNATIVES</b>		
Time-Based Fare	<ul style="list-style-type: none"> <li>· Equitable</li> <li>· Maximizes revenue</li> <li>· Simple to implement and understand</li> </ul>	<ul style="list-style-type: none"> <li>· none</li> </ul>
Special User Fare	<ul style="list-style-type: none"> <li>· Assists users with reduced ability to pay</li> </ul>	<ul style="list-style-type: none"> <li>· Certification may be needed for some users or fraud is possible</li> </ul>
Transfer Charge	<ul style="list-style-type: none"> <li>· Maximizes revenue</li> </ul>	<ul style="list-style-type: none"> <li>· Fraud is possible</li> <li>· Inequitable for short trips</li> <li>· Passenger inconvenience</li> </ul>

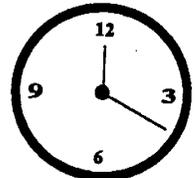
Charging a higher fare for trips of higher quality creates more revenue for the transit system and is more equitable to users, since service of higher quality usually costs more to operate. It is also fairly simple to understand and implement, and riders are usually willing to pay a premium price for a premium service.

Under the Americans with Disabilities Act of 1990 (ADA), the fare for complementary paratransit, which must be provided for individuals whose disability prevents them from using fixed route transit service, may be up to twice as much as the **regular fare** for the equivalent trip taken on fixed route service. Because the actual cost to provide a paratransit trip is typically much greater than twice the cost to provide the same trip on fixed route, consideration should be given to the fare levels for both services whenever contemplating a fare increase (or decrease).

## **Secondary Alternatives**

### **Time-Based Fare**

In a time-based fare structure, the fare is determined by the time period in which trip is taken. Typically, times are categorized as peak (rush hour) and off-peak hours, and a higher fare is charged for trips taken during the peak period. This type of fare structure is most often used by urban systems (both small and large) for which work trips make up a large portion of the ridership. The higher peak fare offers two benefits: 1) more revenue is collected from commuters, who generally can afford the higher charge and who ride during peak hours because of their job hours, and 2) it creates a disincentive for riders who don't need to travel during those hours, and encourages them to ride during the off-peak when capacity is more likely to be in excess (thus relieving any peak hour capacity problems). Using time-based fares helps the system to be more efficient by spreading the demands over time and reducing the peak loads.



### **Special User Fare**

Fares can also vary according to the characteristics of the individual rider. Sometimes the transit system can choose whether or not to establish special user fares; in other situations, the system will be required by law or by regulations governing certain funding sources to charge reduced rates to certain users. For instance, senior citizens (over age 60), young children (under age 5), persons with disabilities, and students (high school or college) are often charged reduced fares from "regular" riders. One advantage of special user fares is that they assist users who typically have lower incomes to lead more independent and productive lives, which benefits the individual and the community. Special user fares can also benefit the transit system indirectly by creating goodwill towards it in the community.



As discussed under Quality-Based Fare, the fare for ADA-mandated complementary paratransit service may be up to twice the amount of the regular fare for the equivalent trip taken on fixed route service.

Transit systems which operate both fixed route services and demand-responsive services for persons with disabilities (in addition to the "ADA complementary paratransit eligible" population) sometimes offer free or substantially reduced fares on the fixed route services for these people to encourage more frequent usage of the less expensive fixed route services.

In some cases, the funding programs or governing bodies of a transit system will mandate reduced fares. Contracts with local schools or agencies can involve a co-payment arrangement for reduced fare trips for their students or clients. Typically this means that the rider pays part of the fare and their sponsoring organization pays the balance of the cost.

The disadvantage to charging special user fares is that it makes the transit system's bookkeeping and recording-keeping system more complicated. Also, special users may need to be professionally certified as eligible, at a cost to the user or the transit system, unless the transit system wants to risk fraud.

### ***Transfer Charge***

In situations when a passenger needs to transfer between routes to complete a trip, the transit system can charge an additional fare for the transfer, usually a nominal amount such as \$0.05 or \$0.10. The added charge adds revenue and is more equitable



where trips of extended distances require transfers (making the charge a distance-based fare of sorts). However, if trips of relatively short distances require transfers, the charge may be inequitable. As discussed in Chapter 6, Revenue Security, there is opportunity for user fraud if careful delineation of how transfers can be used is not made.

### ***How Can You Decide What Type of Fare Structure Is Best for Your System?***

Most of the alternative fare structures can be implemented in conjunction with other alternatives; however, the more alternatives you work into your fare structure, the more complex it will be for users to understand and for you to implement (which makes it more costly to implement). Thus most rural and small urban systems will elect to use only one or two of the options. Each of the structures has its advantages and disadvantages, and choosing one system over another will involve some trade-offs. To decide what alternatives would be most useful for your system, we recommend that **you establish priorities for the desired effect**. Which of the following are you most interested in maximizing?



- Revenue generation,
- Equity among riders, and/or
- Simplicity (in both rider understanding and implementation).

Once you have established the needs of your community and those of your transportation system, the boxes below can help you decide the appropriate fare structure for your system.

If you want your fare structure to maximize: **REVENUE GENERATION**

then your best choice is a: **Distance-Based Fare**

and a good choice is a: **Quality-Based Fare**

but we don't recommend a: **Flat Fare**



*Secondary options: Time-Based Fare  
Transfer Charge*

If you want your fare structure to maximize: **EQUITY AMONG RIDERS**

then your best choice is a: **Distance-Based Fare**

and a good choice is a: **Quality-Based Fare**

but we don't recommend a: **Flat Fare**



*Secondary options: Special User Fare  
Time-Based Fare  
Transfer Charge\**

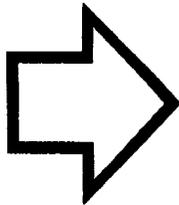
*\* Depending upon route structure, this action may or may not be recommended.*

If you want your fare structure to maximize: **SIMPLICITY**

then your best choice is a: **Flat Fare**

and a good choice is a: **Quality-Based Fare**

but we don't recommend a: **Distance-Based Fare**



*Secondary options: Special User Fare  
Time-Based Fare*

## **The Fare Collection Method**

In addition to your fare level and structure, you have options in the method of collecting fares. You can require users to pay fares in advance (usually in bulk purchases) or accept cash payment at the time of boarding, or allow both. Postpayment is another method accepted by systems which bill agencies for client transportation services, and by a few demonstration projects in the U.S. which accept credit cards as payment for single-ride fares. The three basic methods are summarized in Table 3-2 and described below.

### **Cash**

This is the most common form of fare payment method used in the U.S. Under this method, each passenger pays for his or her one-way trip upon boarding. As a safeguard against fraud and theft, most transit systems that accept cash fares use locked fareboxes which accept coins or coins and dollars. Electronic fareboxes actually count all money deposited and can record ridership data if the operator punches a button that records the type of rider paying the fare. A disadvantage to the use of fareboxes from the user's perspective is that each rider must have exact change to put in the farebox or forfeit the amount paid in excess, as few systems currently allow the driver to make change. However, the acceptance of cash fares is convenient as riders have complete spontaneity in deciding when they will travel (which they do not in services for which tickets must be purchased in advance). From the transit system's perspective, fareboxes are an additional capital cost. However, accounting for fare revenue, especially if data are recorded electronically, is relatively simple. The acceptance of cash fares is most common on fixed route systems, although demand-responsive systems which are open to the general public and have a simple fare structure can use this method successfully as well.



### **Prepayment**

The most common alternative to cash fares are prepayment fares -- those which are purchased in advance of the trip, usually in bulk quantities, often with a discount given to the purchaser as a reward for the advanced payment. Prepaid fares come in several forms, including:

### **Tokens**

Tokens resemble coins as they are small, thin metal (usually brass or aluminum) disks which can be dropped into a farebox upon boarding. They must be minted, are reusable, and do not expire unless all tokens in the system are replaced due to a fare change. Tokens are usually purchased from a machine resembling a change machine but can also be sold by a vendor.



### **Tickets**

Tickets are printed paper or cards which can be given to the driver or deposited in a farebox upon boarding. Usually good for one trip (or, in systems with a distance-based fare structure, for a unit of distance such as a zone), tickets can be sold individually or in multiple quantities (10 or more). Tickets can be prepurchased through the mail or from a ticket vendor and may or may not have expiration dates.



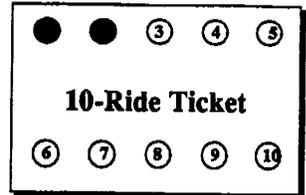
Table 3-2: ALTERNATIVE FARE COLLECTION METHODS

Fare Collection Method	Basic Feature	Subcategories	Kinds of Systems Which Commonly Use this Method	Advantages	Disadvantages
Cash	Cash payment for single trip at time of boarding	coins dollar bills	<ul style="list-style-type: none"> <li>fixed route</li> <li>general public demand responsive</li> </ul>	<ul style="list-style-type: none"> <li>simple accounting</li> <li>passenger convenience</li> </ul>	<ul style="list-style-type: none"> <li>fareboxes needed to prevent fraud or theft</li> <li>passengers must have exact change or drivers must make change</li> </ul>
Prepayment	User purchases a quantity of rides in advance	<ul style="list-style-type: none"> <li>tokens</li> <li>tickets</li> <li>punch cards</li> <li>permits</li> <li>passes</li> </ul>	All types	<ul style="list-style-type: none"> <li>no risk of theft</li> <li>reduced risk of fraud</li> <li>passenger does not need exact change</li> <li>good for transit system's cash flow</li> <li>passenger can get a discount with bulk purchase</li> <li>no fareboxes required</li> </ul>	<ul style="list-style-type: none"> <li>passenger inconvenience -- limits spontaneity</li> <li>not good for passengers' cash flow</li> <li>more complex for system to administer</li> <li>additional materials or equipment cost to system</li> </ul>
Postpayment	User or sponsor is billed for each trip taken	<ul style="list-style-type: none"> <li>contract billing</li> <li>"smart card"</li> </ul>	<ul style="list-style-type: none"> <li>coordinated systems</li> <li>demonstration projects</li> </ul>	<ul style="list-style-type: none"> <li>no fareboxes required</li> <li>passenger does not need exact change</li> </ul>	<ul style="list-style-type: none"> <li>not good for cash flow</li> <li>more complex for system to administer</li> <li>capital expense</li> </ul>



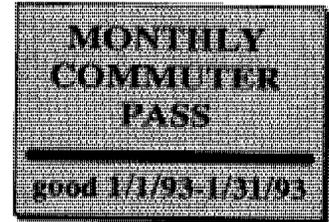
### **Punch Cards**

Punch cards are good for a specific number of trips (or distance units), usually with one symbol for each trip printed on single card through which the driver punches a hole out each time the user boards. Punch cards can be repurchased through the mail or from a ticket vendor and may or may not have an expiration date.



### **Passes**

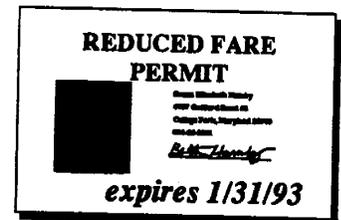
Passes are usually good for an unlimited number of trips during a limited time period (such as one day, one week, or one month) and are sometimes also limited to one route or service type.



They must be displayed to the driver at each boarding. Passes are usually printed on cardstock and are sold through the mail or by a vendor. The initial cost of a pass is often quite high since users are expected to use them frequently during the time limitation. As an incentive to riders, most transit systems offer passes at rates that create a substantial discount in comparison to the regular cash fare basis if the pass is used every day.

### **Permits**

Like passes, permits can be used for unlimited trips during a limited period of time. However, permits are usually good for longer times (such as one year), are laminated to last longer, and contain the name, signature, photograph, and other identifying information of the individual authorized to use the permit.



Permits are most often used for targeting special user groups which are eligible for lower fares, such as senior citizens, persons with disabilities, and students. The cost to each user for a permit is often nominal, but permits are costly to the entity responsible for certifying each individual's eligibility and producing the permit. Transit systems sometimes use permits that another entity has produced for its own clients, such as a human service agency or university.

### **Postpayment**

The third method, postpayment, involves billing riders for each trip taken. This is most frequently used when client transportation services are contracted from human service agencies. Such billing arrangements will be discussed in the next section. In a few demonstration projects in the U.S. today, postpayment is also accepted through the use of bank credit cards or similar cards, sometimes called "smart cards." As a rider boards the bus, instead of feeding the farebox, he or she inserts his or her credit card into a credit card reader. This method is not feasible for the rural and small urban transit operator at this time because of the capital expense involved to purchase a credit card reader, the possibility of fraud, and the potential problems with cash flow a transit system could face using such a system. However, a small transit system could consider accepting credit cards for the purchase of monthly passes or other prepayment sales.

**How Can You Decide  
What Type of Fare  
Collection Method Is Best  
for Your System?**

Deciding the type of fare collection method which would be best for your system involves determining the current and potential administrative capabilities of your system, the capital resources available, and the importance of operational simplicity for your system. The following boxes can help you choose a method which could be most easily implemented by your system.

**CASH FARE COLLECTION** can work well if...

you have fareboxes  
and  
you have an uncomplicated fare structure

**Typical Uses:**

Flat Fares  
Simple Distance-Based Fare Structures  
Time-Based Fare Structures  
Quality-Based Fare Structures  
Special User Fares (with a permit)  
Transfer Charge (with a transfer ticket)

**PREPAYMENT FARE COLLECTION** can work well if...

you have vendors  
and/or  
can sell fare media through the mail or through a machine

and

you have the administrative capacity to handle this method

**Typical Uses:**

Tokens for Flat Fares  
Tickets for Distance-Based Fare Structures  
Punch Cards for Flat Fares  
Passes for Time-Based Fare Structures  
Permits for Special User Fares

**POSTPAYMENT FARE COLLECTION** can work well if...

*(AGENCY BILLING)*

you transport many human service agency clients  
and  
you have an uncomplicated fare structure

or

*(SMARTCARD)*

you have the capital resources  
and  
you have a complicated fare structure

**Typical Uses:**

All types of fare structures  
Demonstration projects (SMARTCARD)

## **Promotional Fares**

Promotional fares are an important marketing element for a transit system, and can be used to attract new riders (and thus generate more revenue), to reward current riders (to create community goodwill), and to attract current riders to use more transit (again, more revenue). Free or reduced fares on certain routes or days or for certain riders are often used in transit marketing. Alternate fare collection methods can also be used in a fare promotion. Transit marketing manuals discuss such strategies in depth.

## **Examples of Fare Policies**

This section presents examples of fare structures that can be used by different types of transit systems:

- Small Urban Fixed Route System,
- Rural Fixed Route System,
- Rural Demand-Responsive System, and
- Small Urban Demand-Responsive System.

### **Example 1: Small Urban Fixed Route System**

Small City Transit operates four fixed routes and ADA complementary paratransit, Monday through Friday 6:00 a.m. to 6:00 p.m. within Small City. These intracity routes are connected at a central transfer point and radiate out from downtown Small City. Small City Transit also operates a fifth route, a commuter route connecting to the other routes at the transfer point. Vehicles on this route travel to a major manufacturer and an industrial park five miles outside of town during the a.m. and p.m. peak hours only (6:30 to 8:30 a.m. and 3:30 to 5:30 p.m.).

Small City Transit wants a fare structure which is simple to implement and understand, yet provides for equity among riders. Small City Transit also wants a simple fare collection method and has the resources available to equip its six small buses and two vans with fareboxes. Small City Transit selects the following fare policy:

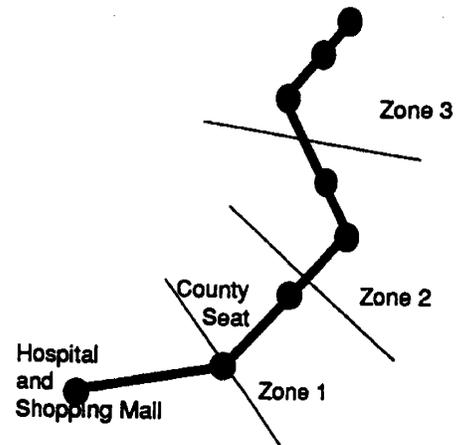
- A flat fare of \$0.75 is charged for all trips (fixed route and ADA paratransit) within the City of Small Transit. Transfers to any of the four intracity routes are free. Transfers to the commuter route cost \$0.75.
- A one-way fare of \$1.50 is charged for trips on the commuter route. (With a transfer from one of the other four routes (or the ADA paratransit service), the fare for the commuter route is \$0.75.) Transfers from the commuter route to the other four routes (or the ADA paratransit service) are free.
- Cash fares and transfer tickets are accepted on all routes and the ADA paratransit service. Commuter route riders can also purchase a monthly pass which is good for full fare on any route or the ADA paratransit service when boarding between 6:00 to 9:00 a.m. and between 3:00 to 6:00 p.m. The monthly pass can be purchased at Small City Transit's administrative office or through the mail, and costs \$45. For persons who commute to the manufacturer or the industrial park every day, the monthly pass costs \$15 to \$21 less than the monthly cash fare.

**Example 2:  
Rural Fixed Route System**

Washington County Transit operates a fixed route service linking a number of small communities in the outlying areas of the county with the centrally-located county seat as well as with a shopping mall and medical center three miles from the county seat. Four routes travel to the outlying communities and back to the county seat several times a day. The routes vary according to the day of the week and the time of the day, but each route contains a limited number of clearly-defined fixed stops. Washington County Transit also operates a shuttle service between the county seat and the shopping mall and medical center as well as an in-town loop. To meet the needs for ADA paratransit, Washington County Transit 1) deviates from its county routes up to 3/4 mile from each fixed stop, and 2) operates a separate paratransit service within 3/4 miles of the in-town loop and shopping center/medical center shuttle.

Washington County Transit wants a fare structure which provides for equity among riders and generates revenue, yet is relatively simple to implement given the complexity of its route structure. The system can afford to equip their vehicles with simple fareboxes but wants to minimize the amount of cash fares it receives. Washington County Transit developed the following fare policy:

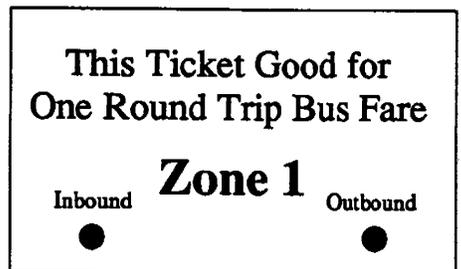
- For the four county routes, riders pay a distance-based fare on a zonal basis. The stops along each route are divided into two zones. The one-way cash fare to travel within one zone is \$1.00, the fare to travel within two zones is \$2.00, and the fare to travel within three zones is \$3.00.



- The in-town loop is free to all riders.

- For the shuttle service to the shopping center and medical center, the cash fare is \$0.50 for all riders each way.

- Washington County Transit sells round-trip punch tickets for its county routes. The prices for the round trip punch tickets are discounted: \$1.50 round trip for one zone traveled, \$3.00 round trip for two zones traveled, and



\$4.50 for three zones traveled (or \$0.75 per zone each way). Each ticket has a spot marked "inbound" and a stop marked "outbound" on it. The driver punches the card on the inbound space when the passenger boards an inbound bus (headed from the county into the county seat) and the outbound space when the passenger boards an outbound bus. Thus, a ticket can also be used if a passenger wants to travel to a community beyond the county seat as long as they will be going the same number of zones they came in on (if not, they must pay the cash fare for the second leg of the trip). In addition, travel on the shopping/medical shuttle is free with the display of a ticket with the a.m. space punched out. Each ticket thus functions as an all-day pass. Tickets are sold in books of 10, and may be purchased through the mail or at the Washington County Transit administrative office.

**Example 3:  
Rural Demand-Responsive  
System**

Community Transit administers a regional network of demand-responsive transit systems serving nine rural counties. Each county has its own local transit provider which schedules and dispatches trips originating in the county and connects with any other providers needed to make the trip. Trips must be scheduled at least a day in advance. The area served in each county changes according to the day of the week. All service is door to door.

Community Transit wants a fare structure that can be used region-wide, provides for equity among riders, generates revenue, and is fairly simple to use given the advanced reservation requirement. In the spirit of "community," they want to charge a lower fare to persons with low incomes. Also, they want to involve local merchants in a joint marketing effort. They have the resources to equip each vehicle with a farebox. Community Transit adopted the following fare policy:

- Fares are distance-based. The base fare, for trips up to five miles long, is \$0.50. An additional \$0.50 is charged for each additional five miles traveled, up to 50 miles (\$5.00). Each additional mile beyond 50 costs \$0.10.
- Senior citizens, children, persons with disabilities, and economically disadvantaged persons are charged half of the regular fare.
- The dispatcher in the local system's office, who takes the trip request and schedules the trip, determines the appropriate fare using a matrix of origins and destinations (of towns and communities). Each passenger's fare is indicated on the driver's manifest. The passenger is informed of the fare amount when the trip is scheduled.
- Merchants can purchase tokens, worth \$0.50 in transit fares, at the rate of \$0.25 each. For each purchase made, a merchant rewards a customer with tokens (the number of which depends upon the amount of the purchase). This provides riders with an incentive to use transit and to shop with the merchants who offer tokens.
- Cash fares and tokens are accepted. Each passenger's fare is included on the driver's manifest.

**Example 4:  
Small Urban Demand-  
Responsive System**

In the City of Jefferson, three local taxi operators provide public transportation within the City limits at the rate of \$1.50 per mile. The City would like to make the taxi service less expensive for persons who are economically disadvantaged, and has decided that a **user-side subsidy** program would be good for the private sector and assist those in need. All of the taxi operators have agreed to provide services for the City if they can bill the City for the full fare for each trip. The City of Jefferson decided upon the following user-side subsidy policy:



- Persons with limited incomes can obtain tickets from the City for a price of up to \$1.00 per ticket. The per-ticket price varies for each individual depending upon their income (on a sliding scale basis). Tickets are sold in books of 10. The County Department of Social Services determines who shall pay how

much for each book of tickets. Persons are limited to a maximum of three ticket books per month.

- The tickets are accepted by the taxi operators for full face value -- \$1.50 per ticket. They can be used to pay the metered fare and tip the driver. Each passenger is responsible for paying the full metered fare with either tickets or cash.
- The taxi operators bill the City of Jefferson \$1.50 per ticket for each ticket received.
- The City has a budgeted limit on the total amount of subsidy it can afford to provide for this service. The subsidy is carefully monitored each month, and, if expenses exceed each month's budgeted amount, the City further reduces the number of tickets it can sell to each person each month, so that costs remain under control.
- Ticket purchasers are encouraged to share rides and split the cost.

## **CONTRACT REVENUES**

### **Types of Contract Revenues**

Contract revenues are an important part of the revenues of rural and small urban transportation systems. As the name suggests, contract revenues involve a funding agency contracting with a system to provide transportation for the passengers specified by the agency.

Transportation systems may be involved in as many as 20 contracts. These contracts often are one-year contracts and must be annually renegotiated. To effectively manage these contracts, transportation system managers should be familiar with:

- generic types of contract revenues,
- approaches for setting contract rates, and
- risks associated with contract rate approaches.

There are two generic types of contract revenues. **Specific-purpose contract revenues** are given to provide transportation for specific clients or people associated with the funding agency. For example, the senior center may contract with a rural transportation system to transport its clients to and from the center. Specific-purpose revenues are the most common type of contract revenues. To be reimbursed, the transportation provider usually must have a way to prove that the trips to be reimbursed have been received by agency clients.

**General-purpose contract revenues** are given to support the general purpose of the transportation provider without any requirements about the specific clients or riders to be served. Often, local governments provide this type of funding. The treatment of general-purpose revenues is a matter of local policy since it involves questions of equity. Providers have different policies for determining what passengers and trips will be supported with general-purpose revenues. Two of the most common allocation policies are:

- **uniform allocation:** The provider uses the revenues to reduce the cost of the trips of all passengers, regardless of agency affiliation. This is commonly done on a fixed-rate per passenger trip but also can be based on a fixed-rate per passenger mile.
- **need-based allocation:** The provider recognizes that some client groups are better funded than others and uses the general-purpose revenues to fund passengers that are not well-supported by specific-purpose revenues. Often, these passengers may not be eligible for support from any client group that contracts with the provider.

The use of general purpose revenues is a local political decision. It is highly recommended that transportation providers develop a clear policy to guide their local decision-makers in this area.

There are two general approaches that are used in service contracts with local client agencies. The **passenger-based** approach is a method by which the client agency agrees to pay the transportation provider a fixed rate per passenger carried. Under the **cost reimbursement** approach, the client agency agrees to pay the transportation provider's actual costs.

The passenger-based approach is the most common contract approach, probably because it is easily understood by the client agencies. It also may be preferred by these agencies over the cost reimbursement method because the agencies' costs will not change if the costs incurred by the provider change.

It is important that the transportation provider carefully evaluate its costs when negotiating passenger-based rates. The provider should try to obtain rates that cover its full costs --- both capital and operating. If you do not obtain a rate sufficient to cover your costs, you will either: 1) have to charge other agencies rates higher than are otherwise needed; 2) eventually be forced to cease services.

You can use a two-variable cost allocation model to analyze your costs. This analysis process consists of five steps:

- Estimate service-specific values for each resource variable;
- Calculate cost estimate;
- Estimate passengers;
- Estimate and subtract general-purpose revenues;
- Calculate fixed-rate per passenger.

## **Approaches for Setting Contract Rates**

### **Passenger-Based Approach**

Chapter 12 describes the two-variable cost allocation model in detail, and Chapter 13 provides several examples of cost allocation. Chapter 4 also provides information about cost analysis.

### **Cost Reimbursement**

Cost reimbursement is the other common contracting approach. In this arrangement, the client agency agrees to pay the difference between actual costs and the service's allocation of general-purpose revenues --- the net deficit. The client agency pays throughout the year based on estimated costs. At the end of the year, the agency makes a reconciling payment based on actual costs. The transportation provider needs to decide how general-purpose revenues will be allocated to the service. This local decision often involves a tradeoff between equity on one hand and the ability to maximize revenues on the other.

You also need to develop a cost allocation method for determining the costs of the service. It is recommended that a two-variable cost allocation model be used. (Again, refer to Chapters 4, 12, and 13.)

For purposes of determining monthly costs, the model should be based on the proposed system budget and projections of annual hours and miles of service. The costs every month would be the product of hours and miles operated that month times their respective unit costs. The client agency's cost is then the difference between the estimated cost and the allocated general-purpose revenues.

For example, assume that you have developed the following two-variable cost allocation model:

$$\begin{aligned} \text{Annual Total Cost} = & (\$13.01 \times \text{Annual Hours of Operation}) \\ & + (\$0.55 \times \text{Annual Miles of Operation}). \end{aligned}$$

During the month of January, you operated 170 hours and 2,510 miles of service to the senior center. The estimated cost of this service is \$3,593. If \$2,278 of general-purpose revenue is allocated to the service, the net deficit and the cost to the senior center is \$1,315 (Table 3-3).

Table 3-3

SENIOR CENTER SERVICE JANUARY COST ESTIMATE

Resource Variable	Average Unit Cost	Value of Resource Variable	Total Cost
Hours	\$13.01	170	\$2,212
Miles	\$0.55	2,510	\$1,381
<b>Total</b>			<b>\$3,592</b>
Allocated General-Purpose Revenues			\$2,278
<b>Net Cost to Senior Center</b>			<b>\$1,314</b>

For the reconciliation payment, the model should be developed from the final financial and operating results for the year. The client agency's cost is determined as the difference between the final net deficit and the sum of the payments for the year.

For example, assume that you developed the following two-variable cost allocation model from the year end results:

$$\text{Annual Total Cost} = (\$13.03 \times \text{Annual Hours of Operation}) + (\$0.54 \times \text{Annual Miles of Operation}).$$

Assume you operated 2,012 hours and 30,101 miles of service to the senior center. The estimated cost of this service is \$42,471. If \$27,302 of general-purpose revenue is allocated to the service, the net deficit and the cost to the senior center is \$15,169. Subtracting the sum of the monthly payments, the reconciliation payment is \$2,490 (Table 3-4).



Table 3-4

**SENIOR CENTER SERVICE  
RECONCILIATION PAYMENT CALCULATION**

Resource Variable	Average Unit Cost	Value of Resource Variable	Total Cost
Hours	\$13.03	2,012	\$26,216
Miles	\$0.54	30,101	\$16,255
<b>Total</b>			<b>\$42,471</b>
Allocated General-Purpose Revenues			\$27,302
<b>Net Cost to Senior Center</b>			<b>\$15,169</b>
Sum of Senior Center Monthly Payments			\$12,679
<b>Senior Center Reconciliation Payment</b>			<b>\$2,490</b>

**Contract Risk**

There are risks associated with any service contract agreement. These risks involve unexpected high costs and low passenger ridership. The two contract revenue approaches differ in how risks are assigned between the client agency and the transportation provider. The transportation provider assumes the risk for both costs and passengers under the passenger-based approach. If costs increase beyond projections or low passenger loads are carried, the provider is required to make up the funding shortfall.

If you must contract using the passenger-based approach, you can reduce your risk in the following ways:

- Negotiate for a minimum payment regardless of the actual ridership. In a sense, this means that the client agency is guaranteeing that a minimum number of passengers will use the service. You should try to make this guarantee as close to your full cost estimate as possible.
- Negotiate to pass through costs that are volatile such as fuel costs and liability insurance premiums. This means that the client agency will share in some of your risk. For example, your contract might read "if the price of gasoline increases, the cost per mile will increase accordingly."

From the provider's viewpoint, the cost reimbursement approach is the best contract form. In this approach, the client agency assumes the risk for both cost increases and low passenger utilization. The uncertainty of cost reimbursement contracts often makes client agencies uncomfortable. To reduce this uncertainty, some transportation providers offer ceilings on cost increases from one year to the next. If costs go beyond these ceilings, the client agencies only are liable for the costs up to the ceilings.

## **GRANTS**

Grants are probably the most important source of funding for public transit systems. Federal grants tend to have more restrictions on how they may be used, while grants awarded from a state or local source sometimes have fewer restrictions. For this reason, we have categorized the different grant programs as Federal and Nonfederal.

### **Federal Grant Sources**

Federal grant programs can be categorized by the types of expenses they fund:

1. **Capital, Operations, and Administration** -- the ongoing, day-to-day expenses.
2. **Technical Assistance and Training** -- periodic improvement projects for one or more aspects of a transit system.
3. **Research, Development, Demonstrations, Planning, and Technical Projects** -- major projects which will lead to new services or major changes in a transit system.

Table 3-5 lists each of the Federal grant programs available to rural and small urban transportation systems.

### **Grants Which Fund Capital, Operations, and Administrative Expenses**

There are three Federal Transit Administration (FTA) programs which fund capital, operations, and administrative expenses of rural and small urban transportation operators. **Except where noted, contact your state's department of transportation for more information.**

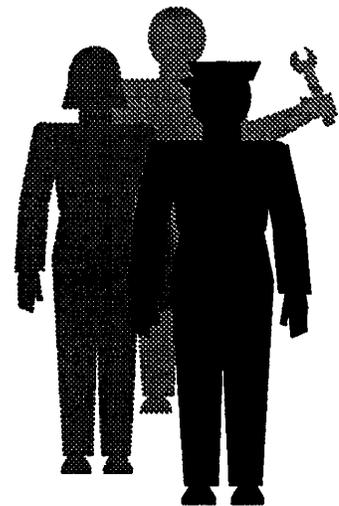


Table 3-5

**FEDERAL GRANT PROGRAMS FOR RURAL AND  
SMALL URBAN TRANSPORTATION SYSTEMS**

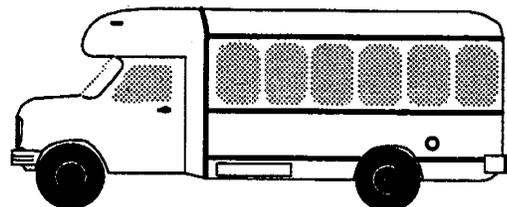
Program Name	What Types of Organizations are Eligible?	What Types of Expenses are Eligible?
Section 18 including 18(a), 18(h), & 18(i)	Local public bodies, nonprofit organizations, Indian tribes, other rural and small urban public transportation providers	Administration, Capital, Operations, Planning, Technical Assistance, and Training
Section 16	Private nonprofit organizations and some public entities	Capital
Section 10	State or local public bodies on behalf of their employees or those of private transportation companies	Tuition for short transportation courses
Section 9	Local public bodies in urbanized areas (population 50,000 or more)	Capital, Operations, Planning
Section 8	Metropolitan Planning Organizations	Planning and Technical Studies
Section 6	State and local governments, universities, and nonprofit institutions	Research and Development Studies
Section 3	State and local public bodies	Capital
USDA FHA	Small and rural communities	Technical Assistance
Section 25(a)(2)	States (may be subcontracted for local planning)	Planning, Research, and Demonstration Projects

### **Section 18**

For the rural and small urban transit system, Section 18 of the Federal Transit Act is probably the most common type of grant received. Section 18 will fund most types of expenses on some level, including capital, administration, operations, and technical assistance and training. Local public bodies, nonprofit organizations, Indian tribes, and other providers of public transportation, including intercity bus transportation that serve rural areas or urban areas with fewer than 50,000 people are eligible to apply for Section 18 funds. Individual states may further restrict eligibility. Each state is responsible for administering the Section 18 program for all of the systems in the state, and each state has its own manner of implementing the formula-based program. The Federal share of capital expenses cannot exceed 80 percent (except for vehicle-related equipment required to comply with the Clean Air Act or Americans with Disabilities Act (ADA), for which the Federal share can be as much as 90%). The Federal share of net operating costs cannot exceed 50 percent. The Federal share of administrative expenses cannot exceed 80 percent.

**Section 16**

Section 16 of the Federal Transit Act provides capital assistance for the transportation of elderly persons, persons with disabilities, and other persons with special transportation needs. Private nonprofit entities, public bodies which coordinate services for elderly persons and persons with disabilities, and public bodies in areas where no nonprofit organizations are readily available to provide transportation services are eligible to apply.



**Section 9**

Section 9 of the Federal Transit Act provides capital, operating, and planning assistance to urban areas on a formula basis. **Section 9(a)(1)** provides these funds to small urban areas (population 50,000 to 200,000).

**Section 3**

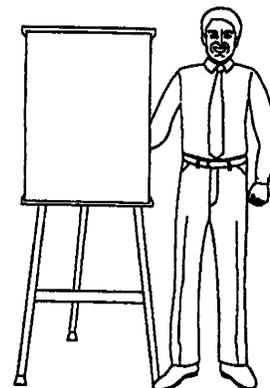
Section 3 of the Federal Transit Act provides discretionary capital assistance. At least 5.5 percent of these funds are available for use in non-urban areas through 1997.

**Grants Which Fund Technical Assistance and Training**

There are several programs which fund technical assistance and training projects for rural and small urban transit systems.

**Section 18(h) Rural Transit Assistance Program (RTAP)**

Section 18(h) of the Federal Transit Act provides funding for technical assistance and training for rural transit systems as well as for research and support services to develop and promote these programs. Each state receives funds which can be used to support local technical assistance projects.



**USDA FHA Rural Passenger Transportation Technical Assistance Program**

The Farmers Home Administration (FHA) of the U.S. Department of Agriculture (USDA) funds the Rural Passenger Transportation Technical Assistance Program. The goal of this program is to promote, by improving the transportation services available in a community, economic development in rural areas and small communities. Under this program, local communities can receive technical assistance in starting up transportation services or improving existing services. For more information, contact the Community Transportation Association of America.

**Section 10**

Section 10 of the Federal Transit Act funds training programs at the local and state level. Funding levels are discretionary. Contact the FTA Office of Technical Assistance and Training for more information.

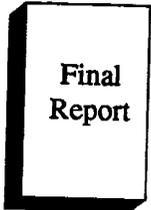
**Grants Which Fund Research, Development, Demonstrations, Planning, and Technical Projects**

For projects that involve research, development, demonstration, planning, or other major technical projects, rural and small urban transit systems can apply for assistance under one of the following grant programs.



**Section 6**

Section 6 of the Federal Transit Act finances research and development studies and demonstration projects that can lead to new ways of improving mass transportation services. Funding levels are discretionary. Contact the FTA Office of Technical Assistance and Training for more information.



**Section 8**

Section 8 of the Federal Transit Act finances transportation planning studies. The states are the recipients of Section 8 funds. Metropolitan Planning Organizations are eligible to apply to their state for these formula-based funds.

**Section 9**

Section 9 of the Federal Transit Act provides capital, operating, and planning assistance to urban areas on a formula basis. **Section 9(a)(1)** provides these funds to small urban areas (population 50,000 to 200,000).

**Section 18(i) Intercity Bus Transportation**

Section 18(i) of the Federal Transit Act sets aside a portion of each state's Section 18 funds for activities related to the provision of intercity bus transportation, including planning.

**Section 26(a)(2)**

Section 26(a)(2) of the Federal Transit Act provides funds to states for planning, research, and demonstration projects. These funds may be subcontracted to local areas for the same purposes.

**Other Federal Transportation Funds**

In addition to the grant programs for public transportation providers outlined above, public transit systems can also tap into other federal transportation funds through contracts with human service agencies as discussed in the previous section. Some of the federal human service grants which fund client transportation are:

- Administration on Developmental Disabilities (ADD)
- Adult Day Care
- Adult Developmental Activities Program
- Aid to Families with Dependent Children (AFDC)
- Alcohol, Drug Abuse, and Mental Health Services Block Grant (ADMS)
- Community Health Centers
- Community Services Block Grant (CSBG)
- Head Start
- Job Training Partnership Act (JTPA)
- Mental Retardation
- Migrant Health Centers
- Pupil Transportation
- Title III - Older Americans Act
- Title V - Community Service Employment for Older Americans
- Title XIX - Medicaid
- Title XX - Social Services Block Grant (SSBG)
- Vocational Rehabilitation

Contracts with agencies funded by some of these programs may be used as local matching funds for federal transportation funds. Contact local human service agencies to determine their interest in

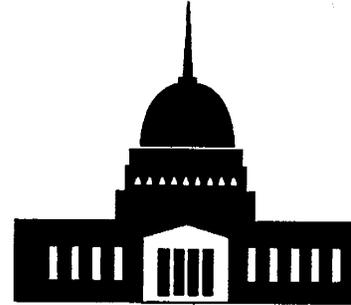
coordinating transportation services. Your state's department of transportation should be able to assist you if your state has an interagency coordination mechanism.

## **Nonfederal Sources**

In addition to the Federal grant programs outlined above, rural and small urban transit operators can access a number of nonfederal sources for grants.

### **State Matching Grants**

Many states provide matching grants to assist local transit properties in meeting the local match required to receive federal funds. Contact your state's department of transportation for more information.



### **Other Kinds of State Grants**

Many states offer funds in addition to (or in lieu of) Federal matching funds. The eligible expenses for these programs vary from state to state. Contact your state's department of transportation for more information. Two examples are the States of Indiana and Maryland.

*The Indiana Department of Transportation, Division of Public Transportation, administers the Public Mass Transportation Fund (PMTF). The PMTF provides 100 percent state funds to municipal corporations, of all sizes, that provide public transportation services. Funds are allocated among the systems on a formula basis. Eligible expenses include local match for Federal Section 9, 9a, and 18 recipients, operations, and capital.*

*The Maryland Department of Transportation, Mass Transportation Administration, administers the Statewide Specialized Transportation Assistance Program (SSTAP). These funds are allocated to each county in the State and the City of Baltimore according to a population-based formula. The 100 percent state funds may be used for operating or capital expenses incurred to provide specialized transportation services for elderly and disabled persons outside of agency program transportation needs.*

### **Local Governments**

County and municipal governments are a key source of funds for many transit systems. A transit system is a public service, and the communities receiving the service are often willing to assist with a large portion of the cost, particularly when the service provides access to jobs, local merchants, and other public services. Contact your local government(s) for more information.

### **The United Way**

The United Way is an important source of local grant revenue for some small transit systems. These funds can be used as local match money. Contact your local United Way for more information.



### **Local Private Foundations**

There may or may not be local private foundations in your community which would support public transportation. Your local Chamber of Commerce can probably direct you to such foundations. Local businesses may be a source of grant revenue to a transit system which serves their employees and customers.

## **INVESTMENTS**

The majority of a transportation operations income will necessarily come from assistance from local, state and federal governments, contracts, and fares. Additional income can also be earned by properly investing excess cash (if any) that the transportation operation has available from nonfederal sources. (Federal government dollars cannot be invested.) One key to making investment decisions is a reliable cash flow forecast (which will be discussed in a later section). As an example of the importance of a reliable cash flow forecast, assume that there is \$15,000 in the transportation operations checking account. If you have a \$12,000 vendor invoice that must be paid in ten days, you would not invest \$10,000 of the \$15,000 in an investment that will not return your money for 90 days. A reliable cash flow forecast will show the transportation operator the amount of excess cash available and the length of time that the excess cash will be available.

This section is not designed to recommend any specific investments or to tell the transportation operator where to invest excess cash. The purpose of the section is to explain some of the key factors that need to be analyzed before making any investment decision and then to describe some common investments. If more specific investment advice is desired, a professional investment advisor should be consulted.

### **Internal Versus External Investment**

The first investment decision that should be made is whether to invest excess cash internally (into the transportation operation) or externally (somewhere outside of the transportation operation). Examples of internal investments would be:

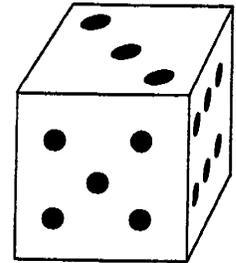
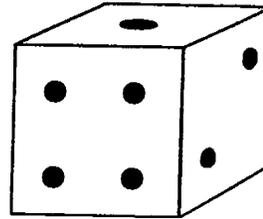
- Purchasing additional transportation vehicles,
- Paying off outstanding loan balances, or
- Obtaining discounts from vendors for early payment.

The decision on whether to invest excess cash internally is dependent on many factors, including the long-term plan of the transportation system. For example, if the long-term plan does not include any growth in the level of service to be provided, then there may be no need to purchase any additional transportation vehicles (except replacement vehicles needed to maintain the existing fleet size).

## Criteria for External Investment

If your transportation system decides to invest excess cash externally, then several factors need to be weighed to select the proper type of investment that will meet your system's goals. The five primary factors are:

- Risk
- Return
- Liquidity
- Maturity
- Diversification.



## Risk and Return

Two major concerns for any investment are risk and return. **Risk** represents the possibility that the investment will decrease in value. For example, a savings account is usually considered a low risk investment because it is insured up to \$100,000 by the Federal Deposit Insurance Corporation (FDIC) or the Federal Savings and Loan Insurance Corporation (FSLIC).

Therefore, there is practically no chance of losing any portion of your original investment. **Return** represents the amount of increase (or decrease) in the investment. For example, the annual return on a savings account is currently around four or five percent.

These two factors are inversely related. The safer an investment, the lower the average return. Riskier investments will, on the average, earn a higher return. However, an individual risky investment may actually decrease in value or become worthless. That is the risk that must be taken to earn the higher return. Most organizations that are investing surplus cash will want to invest in a safe investment. The risk of losing all or a portion of the original investment is usually not considered worth the additional return expected from a riskier investment.

## Liquidity and Maturity

Liquidity represents the amount of time it takes to convert an investment into cash without loss. For example, a savings account at a bank is considered to be highly liquid because it can be converted to cash by going to the bank and withdrawing the money. On the other hand, an investment property would not be considered very liquid because the owner would have to find someone interested in purchasing the property before it could be sold for cash.



Transportation systems should not invest in non-liquid assets.

Maturity represents the length of time before an investment can be converted into cash. For example, a 90-day Certificate of Deposit (CD) will mature in 90 days. After holding the CD 90 days, it can be

taken to the bank and the original investment amount plus interest would be paid in cash. Before the 90 day holding period is over, it is unwise to cash in the CD because you will forfeit part or all of the earned interest to date.

These two concepts are related in that an investment with a long maturity will generally not be very liquid. If you purchase a CD that does not mature for five years, then you cannot convert the investment into cash without a penalty until that five-year period is over. This is where a reliable cash flow forecast (which will be discussed in Chapter 5) is important. Most transportation systems should purchase investments that are highly liquid so that they can convert the investment into cash if the excess money is needed for another purpose. A reliable cash flow forecast will show the transportation operator the amount of excess cash available and the length of time that the excess cash will be available.

### **Diversification**

Diversification is a method of reducing the risk related to investments. If a transportation system had \$5,000 of excess cash to invest and used it to purchase common stock in one company and that company subsequently went bankrupt, the entire \$5,000 could be lost. However, if \$1,000 is invested in the common stock of each of five different companies, then all five companies would have to go bankrupt before the entire \$5,000 is lost. As the chance of all five companies going bankrupt is much less than the chance of one company going bankrupt, the overall chance that the entire \$5,000 would be lost has been greatly reduced. Thus, the risk related to the overall investment portfolio has been greatly reduced.

The negative side of diversification is that the possibility of a large gain is also reduced. One single company's stock price may double in a short time period. However, the chance of selecting five different companies all of whose stock price will double is very low. Thus, the possibility of the overall investment portfolio doubling in a short time period is greatly reduced. Diversification is normally one of the goals of an investment portfolio, as the reduction of risk is often more important than reducing the possibility of a large return.

### **Types of External Investments**

External investments fall into one of six categories:

- Cash and cash equivalents (e.g., a savings account)
- Fixed income vehicles (e.g., a corporate bond)
- Equities (common or preferred stock)
- Real estate
- Natural resources (e.g., oil or gas)
- Tangible assets (e.g., gold or art).

The last three categories can be combined and referred to as "hard assets". These assets are the least liquid and, except in unusual circumstances, a transportation operation would not normally invest in them. Cash and cash equivalents are the most liquid, offer a high degree of safety, but have relatively low rates of return. Fixed income

vehicles and equities are fairly liquid and the safety and rate of return depend on the specific investment. Most transportation operators will want to invest in safe, liquid investments. Below are some common choices within the cash and cash equivalents, fixed income vehicles and equities categories.

## ***Cash and Cash Equivalents***

Examples of cash equivalents are:

- Passbook savings accounts
- Money-market accounts
- Treasury bills
- Short-term certificates of deposit
- Commercial paper.

## ***Passbook Savings Accounts***

Most savings accounts at a bank are insured by the FDIC or FSLIC up to \$100,000. The only requirement is that the bank be a member of the FDIC or FSLIC. Thus, investing in a savings account is very safe. However, the return is almost always very low (4-5% interest). Another benefit of a bank savings account is that the minimum deposit is usually very low. Even though the funds, up to \$100,000, are insured by the FDIC, if the bank you invest in does fail, it can take a month or more before you have access to the money you have invested. Thus, the bank you use should still be chosen with some care.

## ***Money Market Accounts***

An investment in a money market account is very similar to a bank savings account with three exceptions. First, not all money market accounts will be insured by the FDIC, so choose carefully. Second, the minimum deposit will usually be higher in a money market account than in a bank savings account. And third, the return in a money market will usually be higher than in a bank savings account.

## ***Treasury Bills***

A treasury bill (T-Bill) is a short-term obligation of the U.S. Federal Government. They are sold in denominations of \$1,000 and up and can be purchased directly through a Federal Reserve bank or from a broker or bank. If you buy from a broker or bank, you will be charged a small commission. A T-Bill does not actually pay interest, instead it is sold at less than face value (the amount received when the treasury bill matures). For example, a \$10,000 90-day treasury bill might be sold for only \$9,870. After the 90-day holding period is over, the treasury bill may be redeemed for \$10,000. Treasury bills are considered the safest investment because the U.S. Government is borrowing the money. They are also extremely liquid since they can be sold before the maturity date.

## ***Certificates of Deposit***

A certificate of deposit (CD) is another type of investment that can be made at a bank. The CD will have a stated maturity date and interest rate. Typically, the longer the maturity period, the higher the interest rate. There are penalties for early withdrawal. Interest rates on CDs will vary between banks. One word of caution, though: if one



institution is offering a significantly higher interest rate than other CDs, be wary. Unusually high rates often signify greater risk. The institution may not be insured by the FDIC or FSLIC or may be in financial difficulty.

### **Commercial Paper**

Commercial paper represents a method large corporations use to borrow money from the general public. The commercial paper will have a stated maturity date and interest rate. Commercial paper will typically earn a higher rate of interest than treasury bills or CDs because of the additional risk associated with loaning money to a corporation. The minimum investment in commercial paper is usually \$100,000.

### **Fixed Income Vehicles**

Examples of fixed income vehicles are:

- U.S. Government Bonds
- Corporate Bonds
- Municipal Bonds
- Zero-Coupon Bonds
- Mortgage-Backed Securities
- Junk Bonds.



The organization selling the bond is in effect borrowing money from you. They agree to pay you back the money at a specified time in the future, as well as paying you interest periodically at a specified interest rate.

### **Equities**

Common stock and preferred stock are the two primary types of equities. In general, equities can be grouped into four categories:

- Income stocks
- Growth and income stocks
- Growth stocks
- Aggressive growth stocks.

Remember, this section was not written to tell you where to invest your excess cash. The purpose is to inform you of the various options and some characteristics of each option. If more specific investment advice is desired, a professional investment advisor should be consulted.

### **ADVERTISING**

Another source of revenue is the sale of advertising space. Many larger urban transit systems post advertisements on the interior and exterior of their vehicles. Smaller transit systems may also find this a good way to earn some of their local match money ("auxiliary revenue" or "local cash").

## What Advertising Space Can You Sell?

A transit system can offer a number of advertising spaces and has the advantages of a captive audience on board, visibility in the community, and continually used materials. Advertising spaces can include:

- On your vehicles (interior and exterior)
- At your permanent passenger waiting areas
- On your printed fare media
- On your drivers' uniforms
- On your own marketing materials
  - brochures and schedules
  - promotional items (joint promotional efforts)
  - newsletters.

Of course, not all transit systems will find these spaces amenable to posting advertisements.

<p><i>You can take Green Valley Transit to get to these fine establishments:</i></p> <div style="border: 1px solid black; padding: 2px;"> <p><b>Tony's Pizza</b> "best pizza in Green Valley"</p>  </div> <div style="border: 1px solid black; padding: 2px;"> <p><b>GREEN VALLEY CINEMA</b></p>  </div>	<p>To:</p>	<p style="font-size: small;">Green Valley Transit 1111 Green Valley Rd. Green Valley, WI 12121</p> <p style="text-align: center;"><b>Green Valley Transit</b></p>  <p style="text-align: center;"><b>Route 3: Burke Lake</b></p> <p style="font-size: x-small;">for GVT info call (101) 111-1212 </p>
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## What Types of Revenue Can You Earn Through Advertising?

Advertising space can be sold or leased for cash revenue, or can be exchanged for "in-kind" services, materials, and even capital. Depending upon the nature of the business purchasing advertising space on your system, you could negotiate payment in many different forms, including:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Cash Revenue</li> <li>• In-Kind Services           <ul style="list-style-type: none"> <li>-- Radio Advertising Time</li> <li>-- Newspaper Advertising Space</li> <li>-- Vehicle or Sign Painting</li> <li>-- Passenger Shelter Building</li> <li>-- Printing</li> <li>-- Design Work</li> <li>-- Uniform Maintenance</li> <li>-- Driver Training</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• Materials           <ul style="list-style-type: none"> <li>-- Parts</li> <li>-- Supplies</li> <li>-- Fuel</li> <li>-- Oil</li> <li>-- Uniforms</li> </ul> </li> <li>• Capital           <ul style="list-style-type: none"> <li>-- Vehicles</li> <li>-- Office Furniture</li> <li>-- Computer Equipment.</li> </ul> </li> </ul> |
|--|---|

Advertising in exchange for in-kind services, materials, or capital, is often part of a joint marketing effort which may also involve promotional fares, special events sponsorship, and other marketing activities which are addressed in marketing manuals.

## **"Adopt-a-Vehicle"**

One increasingly popular practice is the "adopt-a-vehicle" concept. A business or community group "adopts" a van or bus for a substantial period of time, such as a year, and provides the vehicle with fresh paint which includes the business or group's name and sometimes their logo. The arrangement can also involve a monthly maintenance fee, washing responsibilities, the naming of the vehicle, guest appearances of the vehicle at events sponsored by the adopting organization, etc. A creative marketing manager (or transit manager that wears this as one of many hats) can develop many variations along this theme.

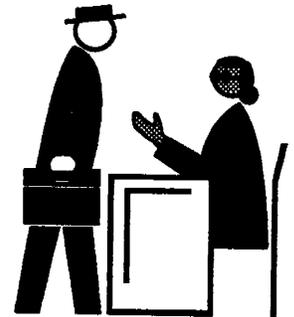


## **To Sell or Not to Sell?**

Advertising revenue may not be appropriate for every community's transit system, as the overabundance of billboards, video displays, and other forms of advertising adds to the visual overload in our environment. However, if it is locally acceptable, advertising can provide a portion of a transit system's local revenue at little or no expense to the transit system.

## **How Do You Sell?**

If you are interested in gaining this type of revenue, you will need to do some of your own "advertising" to get the word out that you have space available. You can start with your local Chamber of Commerce to help identify potential advertisers, consider the vendors your transit system supports (the organizations from which you purchase fuel, oil, maintenance, repairs, parts, supplies, office supplies, office furniture, computer equipment, vehicles and related equipment, advertising time and space, printing, design work, uniforms, uniform maintenance, driver training), and contact each personally to solicit their interest and perhaps develop a joint marketing effort.



## **CONCLUSION**

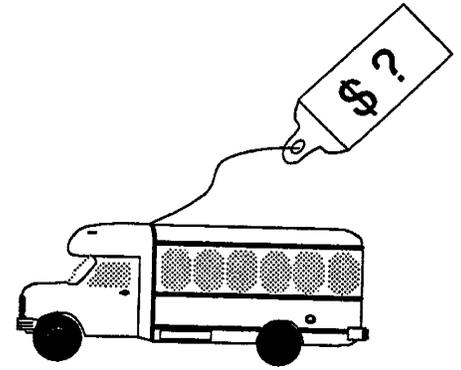
This chapter discussed many of the possible sources of revenue for rural and small urban transportation operators. Identification of sources and levels of funds are key to the iterative planning process described in the previous chapter. In the next chapter, the process of identifying costs to provide transportation will be discussed.





## INTRODUCTION

Cost analysis is a key element of financial planning. Rural and small urban transportation systems make many decisions that involve answering the question *How much does this service cost?* Knowing the costs of individual routes or services is useful for your management purposes and for billing your client agencies.



*How much does this service cost?* is a basic issue not only in public transportation but in all forms of business, both public and private. The basic approach recommended and used by successful business operations and transportation systems is called **full cost accounting**. To use this approach requires an understanding of basic cost concepts and the use of a consistent costing method (model).

This chapter provides an overview of costs. It is divided into two sections:

- **Basic Approach** defines and describes the benefits of the full cost accounting approach.
- **The Basic Cost Concepts** section is concerned with the nature of costs themselves. Basic cost concepts (e.g., capital and operating costs) are introduced to provide a common understanding of the terms that are used in cost accounting.

This chapter is closely related to Chapters 12 and 13; it is necessary to understand the concepts in this chapter before applying the techniques recommended in the later chapters.

## BASIC APPROACH

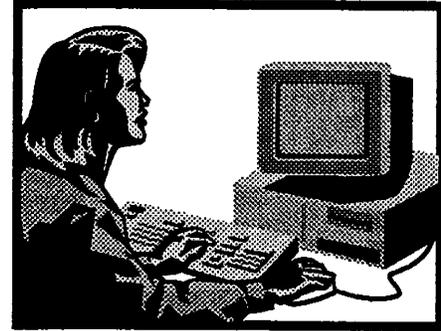
The basic approach recommended and used by successful business operations and transportation systems is called **full cost accounting**.

Using full cost accounting means that the **total** costs of providing transportation services are considered.

The total costs include any commitment of or use of time, money, physical resources, and other assets of the system used in the accomplishment of program objectives. In full cost accounting, a value is given to these commitments **whether or not they resulted in immediate out-of-pocket expenditures**.

The basic reason for using full cost accounting is that all costs must be paid sooner or later. Many transportation providers get in trouble with this principle because they only think about out-of-pocket expenses and not total costs. This thinking often results in not billing client agencies enough to cover costs such as administrative time and facility leasing costs.

Full costing helps a transportation provider to:



- **Better manage transportation services.** Transportation providers should understand all the costs associated with service provision just as they need to understand all the activities that are involved in operating the services.
- **Determine required revenues.** Transportation providers need to know their total costs if they are to properly bill client agencies. They need a flexible method that allows them to adjust costs, or their bills, or both, if revenues are not sufficient.
- **Compare their transportation system's costs and operating performance to other similar systems.** Meaningful comparisons can only be made by using comparable total cost and productivity measures.
- **Recognize the economic value of donations.** Transportation providers need to recognize the economic value of these resources to maximize their use in grant applications. If these resources disappear, transportation providers may have to increase revenues to cover them or restructure services to reduce expenses.
- **Comply with the FTA Private Enterprise Policy.** The FTA requires transportation providers receiving Federal transit funds to conduct "true cost" comparisons. These comparisons require the use of a full costing approach.

There are several basic cost concepts that transportation providers should understand when using a full cost accounting approach. These basic cost concepts include:

- Capital vs. operating costs;
- Fixed vs. variable costs; and
- Direct vs. shared costs.

Each of these paired concepts (e.g., capital vs. operating costs) are expressions of the **total** costs of providing transportation services. They are different ways of looking and thinking about total costs. Although we may not often use these terms, our everyday discussions of costs often involve these concepts.

## **BASIC COST CONCEPTS**

## **Capital Versus Operating Costs**

The total costs used in this section are from the perspective of the transportation provider and are those normally considered as part of the provider's budget. The transportation provider must cover these costs with adequate revenues or his or her system will eventually be forced to cease operations.

The full cost approach is flexible and can be used for other perspectives on total cost. For example, it can be used to meet the requirements of the FTA Private Enterprise Policy. This policy requires that total costs be considered from the perspective of the national taxpayer.

**Capital costs** refer to the expenses associated with long-term acquisitions and leases of physical assets such as vans, buses, garages, and maintenance facilities. These assets often are quite expensive and have a physical or functional life which extends over several years.

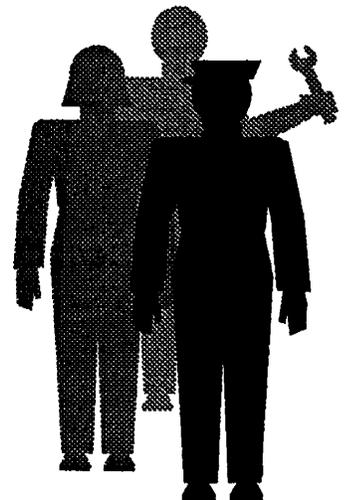
Each year, these assets lose value. This loss in value is known as **depreciation** or the annual cost of capital.

From the local provider's perspective, allowable depreciation costs may include only the provider's local share of the capital grant used to purchase the asset. If no grant was used, the total cost of the asset is used to calculate the depreciation cost. This approach also is required when making the cost comparisons for the FTA Private Enterprise Policy.

It is important for transportation providers to include depreciation costs when costing service. This is a consistent and equitable way to recover the cost of replacing capital assets and save toward future replacements. It avoids the common problem of going "hat-in-hand" to funding agencies every time capital purchases are needed. An accepted approach for calculating depreciation costs is discussed in detail in Chapter 10.

**Operating costs** refer to those expenses that are consumed in a single calendar or fiscal year to make the transit system operate. These expenses include labor, fringe benefits, materials and supplies (e.g., fuel), maintenance, office space and equipment -- all of which are essential to operating your system.

Administrative costs are a kind of operating cost. They must always be considered; they may be most difficult to quantify in the case of a multi-purpose human service agency that provides transportation services as one of many functions.



Administrative expenses are those used to support an agency or program so that it can perform its basic functions (like providing transportation services). Administrative costs cover functions such as planning, pre-program start-up activities, client screening and eligibility determinations, accounting, legal assistance, fringe benefits, and rent. Typical administrative expenses include:

- salaries for administrative personnel,
- fringe benefit costs for administrative personnel,
- rent and utilities for general office and administrative space,
- general office supplies and materials,
- casualty and liability costs not related to vehicle operations,
- most miscellaneous expenses,
- professional fees (e.g., legal and accounting services),
- taxes,
- office insurance, and
- equipment rental.

These expenses are generally not directly related to the level of service provided; they will tend not to change unless the level of service changes significantly.

In a situation where services are provided under contract, **it is essential to determine the costs of all services provided**, even when the services may be provided **by several organizations**. In some instances, all administrative services, proposal and grant writing, advertising, marketing, service monitoring and complaint procedures, auditing, attendance at official meetings and community functions, and fulfilling the reporting requirements of funding agencies may be provided by the same organization that is providing the transportation services. In other instances, one agency (such as a taxi company) may provide the direct transportation services, and will incur most of what are considered to be the operating costs, while another agency (such as the county government or a transit authority) provides the kinds of administrative functions listed above. In order to determine which situation leads to lower transportation costs, all costs expended by all agencies on behalf of transportation functions must be considered.

Taken together, capital and operating costs equal 100 percent of total costs, as shown in the schematic that follows.

### CAPITAL COSTS

- Buses
- Maintenance Facilities
- Other Long-term Physical Acquisitions

+

### OPERATING COSTS

- Labor
- Benefits
- Materials and Supplies
- All Other Expenses Consumed in Operations



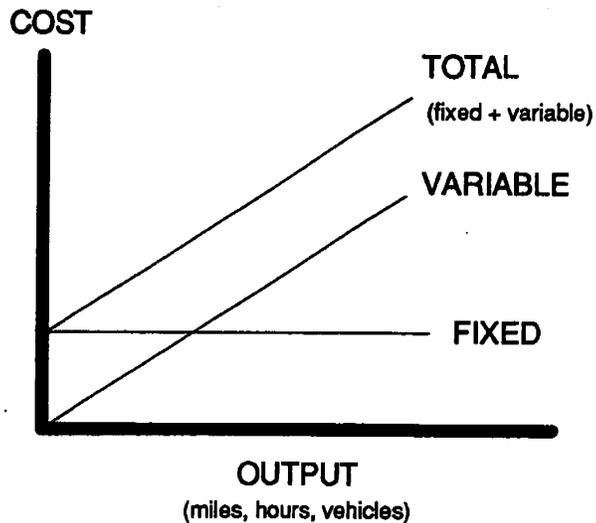
100% of Costs

### ***Fixed and Variable Costs***

**Fixed costs** are those which **do not** vary with the amount of service provided. In most systems, this means that these costs remain unchanged regardless of the number of hours or miles operated. Fixed costs typically include such items as administrative salaries and facility depreciation.

**Variable costs** are those which **do** change with the amount of service provided. These expenses typically include driver wages, fuel costs, and maintenance costs.

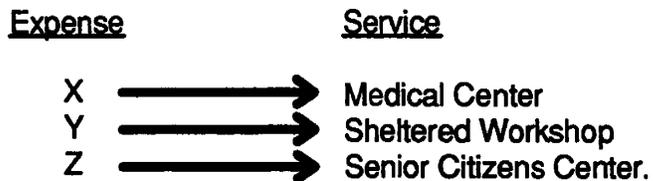
The total costs of providing transit service equals the sum of all fixed and variable costs.



- **Fixed Costs** do not vary with the amount of service provided (e.g., administrative salaries, facility-related capital costs).
- **Variable Costs** change with the amount of service provided (e.g., drivers' wages, fuel costs, maintenance costs).

### **Direct and Shared Costs**

**Direct costs** are those expenses that can be associated on a one-to-one basis with a given service. Examples of these costs include operator labor, fuel costs and maintenance costs. Generally, most of the direct costs of transportation service are variable costs and are the types of costs most people think about when they consider costs.



**Shared costs** are those which cannot be associated on a one-to-one basis with a given transportation service. These costs are representative of functions which often support more than one service. At the individual service level, examples include administrative costs and facility-related capital costs.

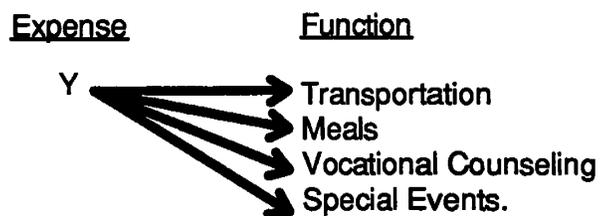
The majority of shared costs are administrative costs. These costs are commonly called overhead costs. These costs cover items such as planning, pre-program start-up activities, client screening and eligibility determinations, accounting, and legal services. It is easy to forget these expenses when you are trying to cost a specific service because you do not see them "on-the-street."



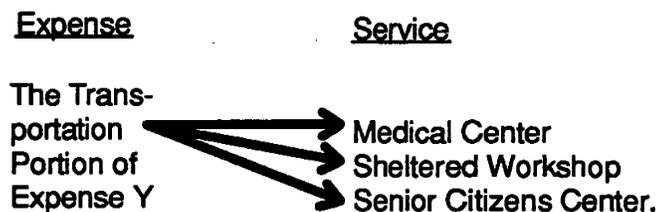
Shared costs are generally fixed costs. They must be allocated on a reasonable basis to individual transportation services in agencies operating more than one service so that revenues can be collected to cover them.

The issue of shared costs is somewhat more complex for many human service agencies as opposed to more traditional transit systems. In many such agencies, transportation is only one of several functions performed by the organization. In such cases, the allocation of shared costs requires a two-step process:

- (1) Allocate shared expenses by function (e.g., distribute the executive director's salary between the transportation function and other functions such as meals, vocational counseling, and special events perhaps on the basis of time):



- (2) Allocate the resultant transportation expense among the services offered (e.g., distribute the transportation portion of the executive director's salary among the transportation services provided by the agency):



The shared cost concept can be applied to allocate costs to multiple funding sources within a transportation service or a transportation department of a larger agency.

It is important for a transportation provider to include the costs of all services provided, even when the services may be provided by another organization under contract. For example, one agency (such as a taxi company) may provide the direct transportation services while the government agency (county government) provides the administrative functions. Consideration could be given to consolidating all the functions at one agency. In order to make a valid comparison, **all of the costs in both alternatives must be considered** (that is, do not forget the administrative costs).

## **SPECIAL CONSIDERATIONS**

### **The Value of Contributions**

Several special issues need to be considered in order to perform complete and accurate full cost accounting. The first of these is assigning values to contributed goods and services, and the second is making corrections for the effects of inflation on costs in future years.

Goods and services used by a transportation system have a value whether or not the transportation system paid for them in cash or by any other means. Donated items -- office space, furniture, equipment, professional services, volunteer services, or anything else -- should be given the value of what it would cost to purchase the item were your transportation system to go out and buy it.



While this rule of assigning a value to donated items is straightforward, some operators have had questions concerning the process of valuing volunteer time. The following information describes how this should be done.

The services provided by volunteers have a monetary value and this value should be included as a cost of producing transportation services. This value should also be included in the budget as revenue from contributed services. While the net effect of the value of the contributed services minus the contra account for expenses is zero, it is important to note that the value of contributions by volunteers can be included as a portion the local match required by some federal programs to qualify their funds.

The value of a volunteer's time should equal that of persons who are paid to perform the same services. For example, if your system has some paid and some volunteer drivers performing the same tasks, and those who are paid are paid at the rate of \$6.00 per hour, then the volunteer's time should be valued at \$6.00 per hour. If there are no paid staff members doing equivalent work to what the volunteer is doing, an equivalent salary for such services for other organizations or, at the least, the federal minimum wage figure should be used.

An example of how these transactions should occur appeared in the Rural Transportation Reporter of May 1986, and is as follows:

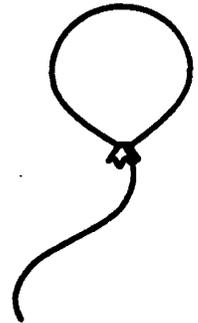
"Remember that you must document all volunteer services, so you will need time cards, signed by the volunteers. Let's assume that you receive time cards for three volunteer dispatchers for 10 hours of service each. To calculate the value of the services, use either the minimum wage or a comparable wage scale for the work accomplished.

$$\begin{aligned} 10 \text{ hours @ } \$3.35/\text{hour} &= \$33.50 \times 3 \text{ volunteers} \\ &= \$100.50. \end{aligned}$$

## **Corrections for Inflation**

Enter into your general journal (daily log of business transactions), the account title, amount, and explanation. Credit the \$100.50 value to a "Contributed Services Revenue Account," and debit it from a "Contributed Services Expense Account" to zero out the credit. [Note: These accounts are identified as Account Codes 430.01 and 530, respectively, in the TAC Chart of Accounts shown in Appendix A.] The zero balance means that the entry does not affect expenses and revenues. Also describe the service provided and the length of time accounted for (that is, ten hours during a three week period, from 6-27 May 1986). From the general journal, post the amounts to the ledger. Again, debit the service value under "Contributed Services," and credit it under "Contra Account for Expenses." Thus the information is documented for grant applications and local match."

Inflation, as an economic concept, refers to an increase in the price of goods and services over time. In other words, a given amount of money loses purchasing power during a time in which inflation occurs, and, several years from now, you will need more than \$100 to buy the same item you can buy for \$100 today.



The consideration of inflation is important because inflation will cause the figures published as guidelines in this manual to become outdated (in a short period of time if inflation is high; in a longer period of time if inflation is low). However, it is possible to apply a "correction factor" to the figures shown in this manual to make them current for any new time period with respect to price changes caused by inflation.

Corrections can be made using information from the U.S. Bureau of Labor Statistics, which publishes Consumer Price Indexes (CPIs) in its Monthly Labor Review that show how the cost of various items has changed. The CPI for all items traces overall changes; there are also CPIs for more precise categories of expenditures, such as food and beverages, housing, transportation, medical care, etc. The CPI is a ratio scale with average prices in the period 1982-84 arbitrarily set at 100. A quick look at the CPI for any given time thus shows how prices compare for the time period in question (for example, July of 1992) to prices in the 1982-84 period.

The procedure for making corrections involves constructing a ratio to determine how much of a change in prices has occurred and to multiply this ratio by the original number to obtain the inflated value. When making the corrections, it is important to note that data for this manual were collected from previous years, and corrected to reflect March 1992 costs, so that the base month and year for the CPI should be March 1992. The formula for corrections due to inflation is thus:

(\$ value shown in this manual) X  $\frac{\text{CPI of current month/year}}{\text{CPI of March 1992}}$  = \$ Value Corrected for inflation

## **Indirect Cost Rates for Multi-function Agencies**

### **Kinds of Administrative Costs**

where  $\text{CPI of current month and year} = \text{CPI for the month and year for which you want to update the costs}$ .

The case of organizations that provide transportation services and other types of services as well merits special attention, particularly with regard to indirect costs. A problem for these agencies and for their respective funding sources is to ensure that their administrative costs are allocated equitably.

For a multi-function agency, there will be two kinds of administrative costs: those associated with administering the operations of the agency as a whole, and those associated with administering specific services, such as transportation, health care, meal deliveries, or others. The latter costs are identical to those described earlier in this chapter (see page 4-4). The former costs, sometimes called the general agency administrative expenses, are discussed in this section. Total general administrative costs include all expenses incurred to provide general administrative support to all agency programs. This includes the costs of functions such as personnel management, grant preparation, payroll preparation, and accounting services. It includes items such as labor, office space, materials, equipment, telephone, postage, etc.

Whether a particular administrative expense is classified as a general administrative or service administrative expense -- these are mutually exclusive categories -- depends upon why the expense was incurred: if it was incurred to support the overall operations of the agency, it is classified as a **general agency administrative expense**; if it was incurred to support a particular kind of service, it is classified as a **service administrative expense**. (Remember that expenses that directly produce services are not administrative expenses, but are direct operating or capital expenses.)

General agency administrative expenses and service administrative expenses are each made up of the same four components: labor, space, equipment, and other expenses. The major difference is that the general agency administrative expenses rate is found by dividing the sum of general administrative labor, space, equipment, another expense by the total operating costs of **all agency programs**, while the service administrative expense rate is found by dividing service administrative labor space, equipment, and other expenses by the operating costs of that **one particular service**.

Several examples may assist in understanding the distinctions between general and service administrative expenses. The general rule is that costs are divided by functions or activities. For example, if an agency rents 5,000 square feet of office space and has offices for the exclusive use of the transportation system that equal 500 square feet, then the transportation service should be charged for ten percent of the monthly rent cost as a service administrative expense. If all programs use a total of 3,500 square feet of office space, then the

remainder -- 1,500 square feet -- would be a general administrative expense to be used in calculating the agency's indirect cost rate. Similarly, if the agency director spends ten percent of her time on the transportation program, then ten percent of her salary and fringe cost is a service administrative charge to the transportation account. If the agency director spends 50 percent of her time on direct service programs, the other 50 percent of her salary and fringe benefits should be charged to general administrative expense.

These expenses are outlined in Figure 4-1 below.

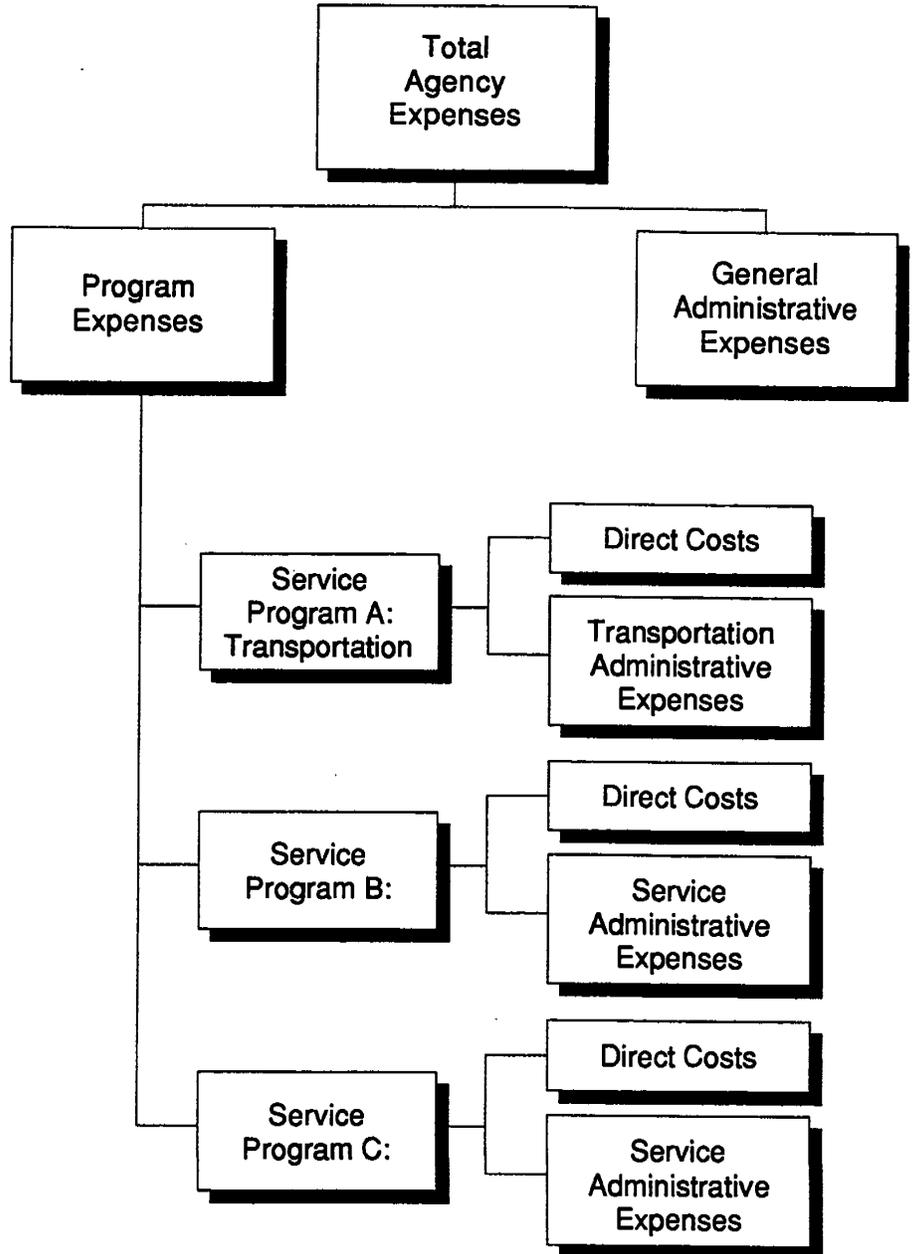


Figure 4-1: EXPENSE TYPES FOR A MULTI-FUNCTION AGENCY

## Indirect Cost Rates

The general administrative expense rate is calculated by dividing all general administrative costs (the sum of general administrative labor (including fringe benefits), space, equipment, and materials) by total agency program operation costs. "Operation costs" for each program include the administrative expenses directly associated with that particular function or program (such as the telephone costs for phone lines used to accept reservations for a demand-responsive transportation service). (In the event that total agency program operation costs are not already known, they can be estimated by subtracting all general administrative expenses from the total overall agency expenses.) Note that these calculations involve actual expenses, not budgeted amounts.

The method for calculating the general administrative expense rate (sometimes referred to as the "indirect cost plans") is to divide the agency general administrative costs by total agency program costs:

$$\text{General Administrative Expense Rate} = \frac{\text{total general administrative costs}}{\text{sum total of all program operating costs.}}$$

## Cautions

System managers and state DOT personnel should be aware of several crucial definitions regarding general administrative expense rates. The first is that **valid administrative (indirect) expense rates should be based on expenses actually incurred, not budgets**. It is not sufficient to say that "40 percent of our program funds will come from DOT this year; therefore, they should pay for 40 percent of our indirect costs;" instead, a **provisional general administrative expense rate** should be established for the forthcoming fiscal year, based on last year's actual direct service and administrative expenses, which can be verified by audit once the books have been closed for that fiscal year.

The second issue is that there are several valid methods of defining costs associated with program operations. One is to **use all program costs**: labor, fringe benefits, direct expenses, and program administration. The second is to **use direct labor costs only**; no other program costs are included in the denominator of the general administrative expense rate calculation. While both of these methods are possible, as are others, the second method is generally preferred by federal audit guidelines. Whatever indirect cost method is used to establish the rate, that rate

- must be reasonable, and
- must be in accordance with the guidelines in describing applicable cost principles:
  - for state, local, or Indian Tribal governments: OMB Circular A-87,

- for private, non-profit organizations: OMB Circular A-122,
- for private for-profit organizations: 48 CFR Part 31,
- for educational institutions: OMB Circular A-21, or
- a plan that has been approved by the federal government

to be acceptable in audits conducted for recipients of federal funds. For recipients of funds from the Federal Transit Administration, allowable costs and procedures for submitting indirect cost plans are specified in FTA Circular 5010.1A, dated September 18, 1987.

An example of the allocation of administrative expenses to various programs can be found in the next chapter. (See Table 5-12.) The allocation in that table is performed on the basis of total program costs, not direct labor costs only.

## **CONCLUSION**

The techniques presented in this chapter are essential to good financial management. Complete and accurate cost estimates are absolutely mandatory for the preparation of accurate budgets, which are discussed in the next chapter. In order to prepare budgets for future years, you will have to consider the effects of inflation on the prices of goods and services you plan to purchase then. Complete and accurate costs are also mandatory for accurate billings of current riders and client agencies (and bidding to potential clients). Accurately allocating costs to clients is discussed in Chapters 12 and 13.





# **Chapter 5: The Budget Process**

A budget can be an extremely useful planning tool. It is simply a forecast of revenues and expenses for the future. If the process is done correctly, the preparation of the budget forces the transportation organization's management to look ahead and forecast how the organization is expected to look a year from now. Once the budget is prepared, it provides a yardstick against which actual performance can be measured.

- **Functions that Budgets Help to Accomplish**
- **Considerations Prior to Preparing the Budget**
- **Preparing the Budget**
- **Budgets as a Control Mechanism**
- **Other Types of Budgets**
- **Conclusion**



## **FUNCTIONS THAT BUDGETS HELP TO ACCOMPLISH**

A budget is a forecast of future revenues and of the costs necessary to produce these revenues. It can be considered a plan of action for the coming months and can be a useful tool in determining the direction of the organization as well as monitoring and controlling its results. However, many people recoil in fear when the word "budget" is mentioned. The image that appears in their mind is often one of an enraged supervisor yelling at everyone because an expense of \$500 was 12 percent over budget. This image does not represent the proper use of budgeting.



Used properly, budgets accomplish three major functions:

- Planning
- Coordination
- Control.

### **Planning**

One of the main benefits derived from preparing a budget is that it forces management to sit down and formally plan what they want and expect to happen in the future. Various alternatives can be considered during the budgeting process, including:

- Curtailing or eliminating certain services
- Extending profitable services
- Adding new services
- Raising or lowering the rates being charged
- Decreasing certain expenses.

As government support becomes increasingly more difficult to obtain, each transportation operator needs to be able to estimate their operating results ahead of time in order to decide the proper course of action. If the budget predicts a large operating loss, then various alternatives need to be analyzed. If, after analyzing all possible alternatives, additional governmental support is necessary, the chance of obtaining the additional support is much greater if you present a well-prepared budget showing the estimated operating deficit and the cost of the services you provide.

### **Coordination**

The second main benefit of budgeting is coordination. By pulling all the information together during the budgeting process, all the individuals involved obtain a better understanding of the overall operation and the interrelations between functions. For example, if it is determined during the budget process that additional services will be provided and the vehicles will be on the road more often, then the person in charge of repairing the vehicles will need to be aware of the

decision because more repairs may be necessary and the repairs may need to be made immediately.

## **Control**

The third benefit of budgeting is that it enhances the ability of management to control operations. By comparing the actual operating results to the budget, management can determine areas which are not performing as expected and determine whether any corrective action needs to be taken.

## **CONSIDERATIONS PRIOR TO PREPARING THE BUDGET**

The following steps need to be considered prior to undertaking the budgeting process:

- Determine the organization's goals and objectives.
- Get significant people involved in the budget process.
- Determine the time frame for the budget.

## **Determine the Organization's Goals and Objectives**

Prior to preparing the budget, the goals and objectives of the organization must be determined as they will guide the direction of the budget. For example, if one of the organization's long-term goals is to provide transportation to the local hospital for all senior citizens, then the budget should not show the hospital program being eliminated. Or if one of the goals is to begin providing county-wide farebox routes within the next eight months, then the budget must reflect the increased revenue and expenses related to starting these routes. Thus, determining the goals and objectives of the organization is the first step in the budget process. (Please refer to Chapter 2, Service Planning, for more details.)

## **Get Significant People Involved in the Budget Process**

Getting people involved in the budget process is important for two primary reasons. First, certain people and/or organizations may have a large degree of control over the options of your organization. For example, if a large part of your funding comes from the local government, then you would want to hold some preliminary discussions with local officials to determine their wants and needs and to realistically determine the level of funding that can be expected. If the local government is financially strapped for cash, then they may have to cut down on the funding provided for transportation. In this case, the budgeting process would need to reflect this decreased local government support and various alternatives would need to be examined. These alternatives would include finding alternative sources of income or finding ways to decrease expenses.



The second reason to get people involved in the budget process is to make the final budget more acceptable. If a person has had a fair amount of input into preparing the budget, then that person is much more likely to believe that it is realistic. In addition, a sense of commitment often develops. If a driver is told that he or she must reach a certain level of passengers per vehicle hour, then resentment instead of commitment might often develop. On the other hand, if the driver participates in the budget process and agrees that he or she needs to reach that level of passengers per vehicle hour, then the driver will more than likely be committed to reaching that goal.

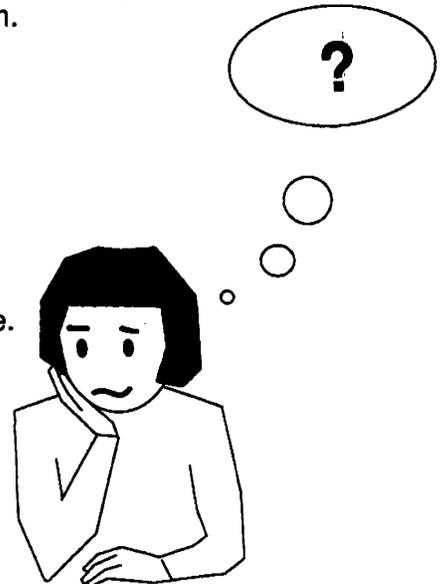
### ***Determine the Time Frame for the Budget***

A budget can be prepared for any period of time desired. Typically, budgets are prepared once a year for the upcoming year. The yearly budget is broken down into 12 monthly budgets. This allows management to compare the actual results to the budgeted results on a monthly basis. In addition to the yearly budget, many transportation operators also prepare a three- or five-year master plan. This master plan is not prepared with as much detail as the yearly budget and shows the general direction that management wants the company to head. These time frames are also not written in stone.

## **PREPARING THE BUDGET**

The process of determining a budget can be summarized in the following sequence of steps:

1. Analyze the goals and objectives of the organization.
  - a. Analyze each current program.
  - b. Search for new programs.
  - c. Analyze overhead costs.
2. Estimate revenues and direct expenses for each program.
3. Estimate overhead costs.
4. Estimate general funding revenue.
5. Explicitly list major assumptions used to prepare the budget.
6. Pull it all together into a budget form.

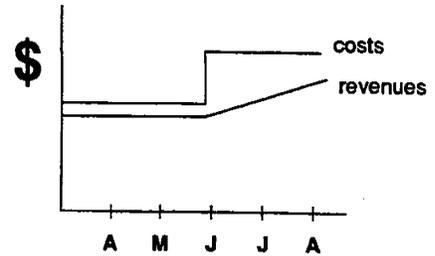


### ***Analyze the Goals and Objectives of the Organization***

The first step in the budgeting process is to analyze the goals and objectives of the organization and relate them to the organization's future activities. Each of the transportation operator's current programs needs to be analyzed to determine if any changes in the program should be budgeted. For example, if one of the goals of the organization is to extend the bus service currently provided to the community, then the budget should include increased revenue from the bus service, as well as increased costs related to the service. The

increase in revenues and costs may not occur at the same rate. An example will help to clarify this point.

If the organization plans to add three new bus routes in June, then the budget should probably include a jump in costs in June when the additional routes begin. After this jump, the costs of the bus route service would remain relatively constant. The increase in revenue from these routes would probably be more gradual. It may take riders several months to realize that the new routes are in effect and to start using the routes on a regular basis. Thus, the revenue may not increase in June when the new routes are added, but would start to increase in July as more customers ride the new routes. The revenues from the new routes would increase each month until they eventually reach a stable level.



This example shows how the organization's goals and objectives can influence programs currently in place. These same goals and objectives also will impact the search for new programs. Since preparing a budget means planning for the future, any new programs that are expected to be initiated during the time frame of the budget should be taken into account. Any new programs should be undertaken in response to the organization's objectives. If the organization's objective is to provide transportation to any elderly person for medical or social needs, then a new program to provide transportation to school children would not be appropriate (unless it met another of the organization's objectives). However, a program to provide van service to and from the senior citizen's center would be appropriate.

Once those new programs that fit with the organization's goals and objectives are identified, each program needs to be analyzed to determine whether it should be undertaken. An estimate of the revenue and expenses from each program needs to be made, as well as any other impact the new program may have on existing services. For example, providing special van runs to and from the senior citizen's center might decrease revenue from existing bus route services if some senior citizens currently use the buses to reach the senior citizen's center.

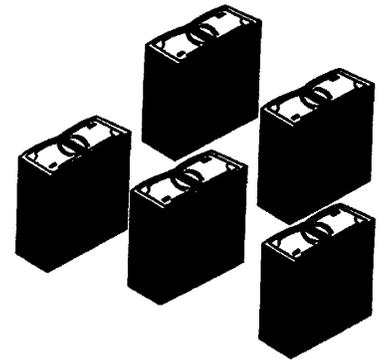
Once all the estimated financial information on each new program is prepared, management needs to determine which new programs, if any, will be initiated and when the new programs will begin. The budget would then reflect these decisions. Sometimes, preliminary budgets will be prepared so that management can see the effect of including or excluding certain services. For example, there may be a service which management wants to provide, but is unsure whether they will have the necessary cash. A budget may be prepared

assuming that the new service will be provided. If the budget shows that the organization cannot afford to provide the service, the budget may be amended by removing that service.

The final step regarding analyzing the impact of the organization's goals and objectives is to determine their impact on overhead costs. Overhead costs (sometimes referred to as indirect costs) represent expenditures not directly related to the production of a product or performance of a service. For a transportation operator, costs such as drivers' wages and fuel for the vehicles would be direct costs. Costs such as office rental, administrative staff wages, and repairs on the building would be overhead costs.

The organization's goals and objectives can influence overhead costs in a variety of ways such as:

- Services may be increased to the extent that additional overhead costs, such as another office, may need to be added.
- Services may be decreased to the extent that certain overhead costs can be reduced.
- Certain services may be added which require overhead costs of a nature that previously were not necessary (e.g., expanding services may increase farebox revenues to the point where additional personnel are required to count the increased cash from fares).
- Certain overhead costs may be eliminated if the service requiring the cost is eliminated.
- A goal of better service may necessitate additional support people to ensure that the improved service is provided.
- A goal of reducing costs may necessitate eliminating or reducing non-essential overhead costs.



The general impact of the organization's goals and objectives on overhead needs to be determined. Later on, estimates of overhead costs for inclusion in the budget will be discussed.

### ***Estimate Revenues and Operating Expenses for Each Program***

After analyzing the impacts of the organization's goals and objectives, you will have a solid foundation on which to prepare the budget. The next step is to analyze each program to forecast the revenues and direct expenses related to that program. Some of the variables to consider in this step are:

- Historical revenues and expenses, as well as trends in these historical amounts.
- The effect of the organization's goals and objectives.
- External factors (e.g. the economy, the demographics of the geographic area).
- Seasonal trends.



EXPENSES

REVENUES

### **Historical Amounts**

An example of the budgeting process for revenues from the fixed route portion of the operations of the Gordon County Coordinated Transportation System (GCCTS) will help illustrate the process. The starting point for a typical budget is the recent history. If revenue from fixed routes was \$30,000 last year, \$28,000 the year before and \$25,500 two years ago, then the starting point for budgeted revenues from these routes might be \$32,000 (last year's amount plus a slight increase).

### **Goals and Objectives**

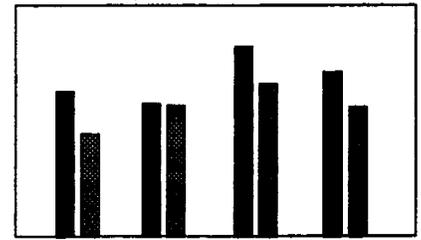
The effect of the organization's goals and objectives then must be analyzed. If management plans on reducing the service, then budgeted revenues would be decreased. If management plans on extending the service, then budgeted revenues would be increased. Assume that GCCTS currently runs six bus routes and management plans on adding three new routes in June. The starting budget of \$32,000 might be increased to \$40,000 to reflect these new routes, realizing that it will take a few months before customers fully utilize the new routes.

### **External Factors**

External factors must now be taken into account. This step can be very difficult. For example, assume that Gordon County is expected to experience a severe recession during the upcoming year. Will this recession increase or decrease revenue? One impact of the recession will be that more people cannot afford a car. This would tend to increase the revenue from bus routes. Another effect will be that as layoffs occur, fewer people need to take the bus to work. This would tend to decrease revenue from bus routes. However, if the people laid off decide to take college courses to learn a new skill, then the layoffs might increase revenue, particularly if the bus routes primarily center around providing service to the local college. All these factors need to be analyzed to determine the effect of the external factors on the revenue from the transportation services.

The economy is not the only external factor that needs to be analyzed. Demographics (the composition of the population) also have an effect. Currently, the American population is getting older. Due to medical advances and other factors, people, in general, are living longer. This factor would tend to increase the revenue from providing transportation services to a senior citizen's center. However, the only demographics

that matter to an individual transportation operation are the demographics in the local areas in which they operate. Regardless of the national trend, a local operation's revenue will only be affected by the number of senior citizens in their operational area.



Returning to the original example of the GCCTS routes, assume that because the vast majority of the fare revenue comes from students riding to and from the college, the only significant external factor is the number of students attending the local college. If officials at the college forecast a five percent decrease in the number of students enrolled next year, then the budgeted fare revenue shall be decreased by five percent. Since after taking into account the three new bus routes expected to begin in June, the budgeted revenue was \$40,000, this budget would be reduced by five percent to \$38,000. In real-life situations, there will usually be a number of external factors to take into account.

**Seasonal Trends**

This budget for the entire year will need to be broken down into monthly budgets. To do this, the seasonal trend of income needs to be analyzed. In the above example, the monthly revenues would probably be lowest during the summer (when fewer students are attending college) and during December (when Christmas break occurs). The trend can usually be determined by analyzing the prior years' history. Assume that the monthly fare revenue during the past three years has been the amounts shown in Table 5-1.

Table 5-1

**ACTUAL MONTHLY FARE REVENUE  
GORDON COUNTY COORDINATED TRANSPORTATION SYSTEM**

	1991	1990	1989
January	\$2,600	\$2,400	\$2,100
February	3,000	2,800	2,500
March	3,000	2,850	2,600
April	2,900	2,700	2,450
May	3,100	2,950	2,750
June	1,400	1,200	1,050
July	1,200	1,000	800
August	1,300	1,100	900
September	3,300	3,200	3,000
October	3,200	3,050	2,900
November	3,100	2,950	2,800
December	1,900	1,600	1,650
<b>Total</b>	<b>\$30,000</b>	<b>\$28,000</b>	<b>\$25,500</b>

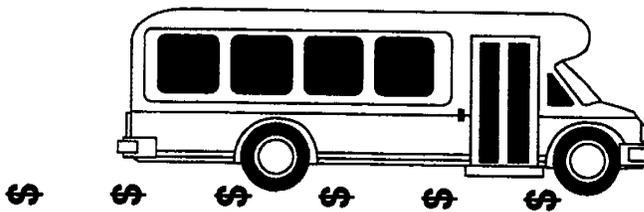
Table 5-1 shows the seasonal nature of the fare revenue. The monthly budgets for the current year also needs to take this pattern into account. The current year monthly budgets also need to take into account the three new routes which are planned to start in June. The monthly budget might look like Table 5-2.

Table 5-2

1992 GCCTS BUDGETED MONTHLY FARE REVENUE

	Existing Routes	New Routes	Total
January	\$2,650	\$ -	\$2,650
February	3,000		3,000
March	3,050		3,050
April	2,900		2,900
May	3,150		3,150
June	1,450	400	1,850
July	1,300	700	2,000
August	1,400	800	2,200
September	3,350	1,300	4,650
October	3,200	1,500	4,700
November	3,150	1,600	4,750
December	1,900	1,200	3,100
<b>Total</b>	<b>\$30,500</b>	<b>\$7,500</b>	<b>\$38,000</b>

Table 5-2 now represents the budgeted revenues for the bus route service for the upcoming year. The next step is to forecast the direct expenses related to the bus route service. The forecast should be based on explicit assumptions whenever possible. For example, if the direct costs per vehicle mile from the prior year can be determined, then the upcoming budget can be calculated by multiplying the current year's budgeted vehicle miles times the direct costs per vehicle mile.



This process must be completed for each program that will be in effect during the upcoming year. The individual budgets, both monthly and for the entire year, are then pulled together to determine the overall budget for the transportation system. A small-scale example of a budget for the entire year is shown in Table 5-3.

Table 5-3

GCCTS DIRECT EXPENSE BUDGET -- 1992

	Bus Routes	Vans to Senior Citizens Center	Vans to Community Day Care	Total
Revenues	\$38,000	\$42,000	\$24,000	\$104,000
Direct Expenses:				
Operators' Wages	12,800	13,600	9,200	35,600
Operators' Fringe Benefits	3,200	3,400	2,300	8,900
Vehicle Repairs	1,858	1,749	1,093	4,700
Fuel and Other Direct Expense	8,500	8,000	5,000	21,500
Operating Margin	\$11,642	\$15,251	\$6,407	\$33,300

**Estimate  
Administrative  
(Overhead) Costs**

The next step in the budget process is to estimate the administrative costs of the organization. The same process that was used to estimate revenues and expenses for programs is used to estimate overhead costs. The total of administrative expenses incurred in prior years is used as a starting point. This starting point is adjusted for the effects of the organization's goals and objectives and the effect of all identifiable external factors. The resulting annual budget is then broken down into monthly segments taking into account any seasonal trends.

An example should help to illustrate the process. Assume the historical data on overhead costs is shown in Table 5-4; based solely on this historical data, the budget shown in Table 5-5 for the upcoming year could be recommended.

This now becomes the starting point for the rest of the budget process. Next, the effect of the organization's goals and objectives on the administrative costs is determined. The first effect would be the additional bus routes being added in June. This would probably result in no additional administrative costs.

Table 5-4

ACTUAL PRIOR YEAR GCCTS ADMINISTRATIVE COSTS

	1991	1990	1989
Admin. Salaries & Wages	\$25,600	\$24,100	\$23,800
Admin. Fringe Benefits	5,200	4,500	3,900
Property & Other Taxes	4,800	4,600	4,400
Office Supplies	900	650	800
General Insurance	3,600	3,050	2,500
Other Indirect Costs	1,300	1,100	1,200
<b>Total</b>	<b>\$41,400</b>	<b>\$38,200</b>	<b>\$36,600</b>

Table 5-5

GCCTS 1992 ADMINISTRATIVE COSTS BUDGET

	1992 Budget
Admin. Salaries & Wages	\$26,000
Admin. Fringe Benefits	6,000
Property & Other Taxes	5,000
Office Supplies	1,000
General Insurance	4,000
Other Indirect Costs	1,500
<b>Total</b>	<b>\$43,500</b>

Also assume that another organizational goal was to reduce the administrative costs, and this would be accomplished by making employees pay for a portion of their health insurance and other benefits. (Note: Some states treat fringe benefits for drivers and other direct service personnel as administrative instead of operating costs.) Again, the effect of the proposed change should be investigated; in this example, the proposed changes could reduce the expense by \$1,500. This would decrease the fringe benefits expense budget to \$4,500. The other indirect costs budgeted could also be analyzed; if it was determined that certain costs could be eliminated or reduced and the expense reduced by \$500, the budget would be lowered to \$1,000.



Next, the effect of any external factors needs to be analyzed. Assume that a large discount office supply retailer just opened across the street from your building and by purchasing your office supplies from this store, you expect to realize a \$200 savings in office supplies. You can reduce the office supply budget to \$800. At this point, the new annual budget is shown in Table 5-6.

Table 5-6

REVISED 1992 GCCTS BUDGET FOR ADMINISTRATIVE COSTS

	Revised 1992 Budget
Admin. Salaries & Wages	\$26,000
Admin. Fringe Benefits	4,500
Property & Other Taxes	5,000
Office Supplies	800
General Insurance	4,000
Other Indirect Costs	1,000
<b>Total</b>	<b>\$41,300</b>

Adding these administrative costs to the annual budget from before, the budget shown in Table 5-7 would result.

The next step is to separate the annual overhead budget into monthly budgets based on seasonal trends and other forecasted factors. This process is very similar to the process for determining monthly bus route revenue (which was already illustrated in Tables 5-1 and 5-2).

Table 5-7

GCCTS BUDGET FOR THE YEAR ENDING DECEMBER 31, 1992

	Bus Routes	Vans to Senior Citizens Center	Vans to Community Day Care	Total
Revenues	\$38,000	\$42,000	\$24,000	\$104,000
Direct Expenses:				
Operators' Wages	12,800	13,600	9,200	35,600
Operators' Fringe Benefits	3,200	3,400	2,300	8,900
Vehicle Repairs	1,858	1,749	1,093	4,700
Fuel and Other Direct Expense	8,500	8,000	5,000	21,500
Operating Margin	\$11,642	\$15,251	\$6,407	33,300
Overhead Costs				41,300
Deficit				(\$8,000)

**Estimate Capital Costs**

Capital budgets are like operating budgets. They are financial plans, based on the goals and objectives of the transportation organization, which support both present and future service activities. Unlike operating budgets, capital budgets are concerned with financial investments or expenditures in physical assets such as vehicles, equipment, and infrastructure. Because physical assets are considered to have life expectancies extending into future beyond the normal time frames of operating budgets (one fiscal year), they are treated differently in the budgeting as well as the accounting process.

Operating budgets consider items such as labor, services, and materials such as fuel, tires, small parts, office supplies, etc. Each of these items are generally bought, paid for, and consumed in relatively short time frames. They are treated in the context of financial accounting as operating expenditures. Capital budgets are concerned with expenditures of funds for items or projects which have repeat use over relatively long periods of time. The fact that no capital item or project has an indefinite life also means that plans for improvement and/or replacement must be established. These plans are commonly referred to as a **capital program**.

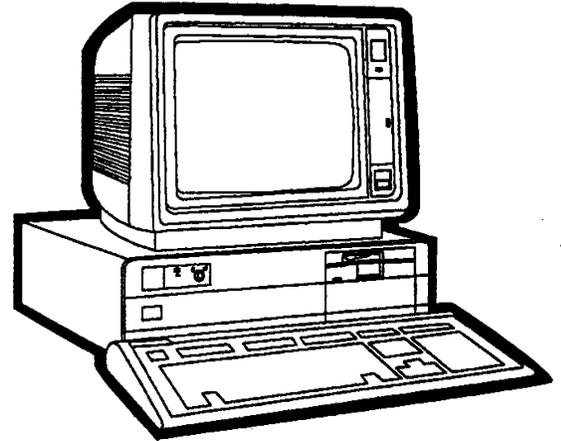


## Capital Assets

Assistance to purchase capital assets is available to eligible transportation systems in the form of grants from the federal government as well as from many state governments (See Chapter 2, Grants). Grant eligibility requirements and funding assistance levels of these grants have varied over time and by location. It is important to recognize that federal and state grant assistance programs have greatly influenced the capital programming and budgeting processes of most public transportation systems.

There are three general categories of projects which constitute capital programs. These categories and examples of items within each are as follows:

- **Vehicles:** Buses, vans, maintenance trucks, and supervisory vehicles.
- **Equipment:** Radios, fareboxes, shop tools, office equipment, and computers.
- **Facilities:** Office buildings, maintenance garages, roadway pavement and other infrastructure, passenger shelters, benches, and signs.



Engines and transmissions, which are purchased for use in vehicle rehabilitation projects, are often considered as capital assets.

## Getting Started

The first thing in formulating a capital budget is to know what's already available to conduct business. This means, before projects are programmed into a capital budget, **an Inventory of assets and their condition** is essential. The inventory should contain the original purchase price, date the project was put into service, and an assessment of the project's current condition. This inventory should be updated annually to ensure conditions are the same or different. The reason for the inventory of assets is to provide a comparative basis for determining whether existing assets provide efficient and effective use.

The second thing to know is **purchase price or cost** of any proposed project. How much will the item cost? What are the **terms and conditions** for purchase? For example, is payment for the item a single up-front payment to the vendor, manufacturer, or contractor or are several payments to be made extended over time? This information is important to know because it affects the cash management process, the scheduled receipt of any grants, and the priorities and programming of capital projects.

The third thing to know is what **financial assistance**, if any, can the public transportation system expect to receive. Are federal Section 18 or 16 funds available and how much? Are state and local government funds available and how much? Presumably, the more assistance which may be received, the more needed capital assets may be purchased.

The fourth essential piece of information needed is **how long the item is expected to last**. A maintenance garage may last 20 years, a micro-computer for the office about 5 years, and vans about 4 or 5 years. Guidelines for life expectancy of public transportation items are generally available from state DOTs. This information is important because it reveals something about the replacement schedule. For example, if three vans are purchased and put into use in 1990, and if the life expectancy of the vans is five years, then in 1995, it is likely those vans will be replaced by new vans or vehicles, assuming there are no changes in the justification for the vans.

Lastly, it is important to know the type of project. Type of project answers the question Why this project? Is the project for replacement or rehabilitation purposes, for technology upgrade, or for expansion of operating activities? Examples of each type of project include:

- Replacement or rehabilitation of existing assets: maintaining the same type of service vehicle.
- Upgrading to reflect new technology: changing from a typewriter to word processing equipment.
- Expansion to meet expanding service areas and levels: designing and constructing a larger maintenance facility to accommodate larger fleet requirements.

This information is important for use in establishing program priorities.

### ***Determining Capital Needs***

Capital needs of a transportation system are fundamentally determined by the both the long- and short-range service plans (See Chapter 2). The plan establishes service requirements based on organizational goals and objectives. Service plans typically identify capital projects which are necessary for enhanced, expanded, and new service. Service plans are not always concerned with rehabilitation and replacement capital projects which are necessary simply to continue the existing services. Capital projects can be used to purchase items such as maintenance facilities and shop equipment, administrative offices, computers, furnishings, lighting, building roofs and infrastructure. Therefore, it is important to include all key staff members in identifying asset deficiencies and capital needs in the budgeting process.

During the transportation system's budgeting cycle, all capital needs of the transportation system should be listed in tabular format, as in Table 5-8. The purpose of the table is to provide information necessary to establish priorities, in concert with goals and objectives, and formulate a capital program. Each proposed capital project should be estimated in current or present value dollars including the annual amounts to be expended over the first five years without regard to the start date. Amounts to be expended beyond five years may be aggregated. The columns of the table should contain the following information:

- Name of the proposed project, e.g., 15-passenger lift-equipped van. [Column 1]
- The needed quantity of the project, e.g., 3. [Column 2]
- Estimated purchase price of each item, e.g. \$30,000. [Column 3]
- Total estimated capital cost, e.g., \$90,000. [Column 4]
- Estimated life expectancy of the project, e.g., 4 years. [Column 5]
- Project category, e.g., B, indicating the replacement category; C, indicating new equipment. [Column 6]
- Estimated financial assistance, e.g., \$72,000. [Column 7]
- Project start year, e.g. Year 2 (the year that the vans are proposed to be placed into service) and the net estimated local capital cost, e.g. \$18,000, in the Year 2 column. (If state assistance were available the local share would be less.) There should be six (6) columns here, one for each of the first five years plus one for all future years starting with Year 6. [Columns 8 through 13]
- Associated operating cost increase or savings, e.g., \$4,000. Maintenance employees will require retraining on new components but vehicles are estimated to improve fuel efficiency. [Column 14]
- Project classification. A ranking of relative priorities. [Column 15]
- Comments including use of the project and estimated benefits. [Column 16]

After the tabulation of all proposed capital needs which are desired to be implemented in one or more of the first five years, columns with dollar values should be totaled. The information contained in the worksheet will be used to prioritize projects and prepare the capital program.

Table 5-8: CAPITAL NEEDS AND BUDGET WORKSHEET

Proposed Project	(2) Quantity	(3) Purchase Price (each)	(4) Total Cost	(5) Life Expectancy (years)	(6) Project Category	(7) Estimated Financial Assistance	(10) Capital Program Years						(14) Operating Cost (Savings)	(15) Project Class	(16) Comments
							1	2	3	4	5	6+			
Van, 15-Passenger, Lift Equipped	2	\$30,000	\$60,000	4	B	\$72,000	\$18,000					\$4,000	2	Standard replacement of vehicles to continue service	
Garage Roof Repairs	1	\$26,000	\$26,000	15	B	\$13,000						(\$10,000)	1	Roof is leaking water causing parts room damage	
PC Computer and Printer	1	\$4,000	\$4,000	5	C	\$3,200						(\$6,000)	3	Improve operations and functions of data processing.	
<b>Total</b>			<b>\$120,000</b>			<b>\$88,200</b>	<b>\$18,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>(\$12,000)</b>			



## **Establishing Priorities for Funding**

Because there will always be greater need and potential expenditures for projects than there are revenues for pay for them, some procedures must be established in order to determine which projects are most needed or most beneficial and which projects may have to be deferred. Establishing priorities is fundamentally a subjective process because there are many factors which should be considered. Capital projects should be classified into three groups:

- **Essential** is the highest priority category and would include those projects which are emergency in nature, mandatory, and/or a continuation of a large project into another fiscal year. It is possible service expansion plans could place new vehicles in this group (Rank 1).
- **Normal replacement** are those projects which are generally programmed and well known in advance such as vehicle replacement due to age and/or mileage (Rank 2).
- **Discretionary** essentially is the lowest category and contains those assets not included in the first two categories (Rank 3).

This information should be entered in Column 15 of the table previously prepared for determining capital needs. Sort the table on Column 15 values from low to high. All of the essential projects will then be listed first, normal replacement second, and discretionary projects last. Subtotal the column with dollar values by classification.

First, determine whether the total dollars in the essential class (Rank 1) for each of the first five years (Columns 8 through 12) are estimated to be available from local resources. If local dollars are not sufficient, check to see whether federal and state grant assistance (Column 7) is available. This may require telephone calls to the state DOT to determine funding availability for your transportation system. If there are sufficient funds available from local, state, and federal sources, all of the essential (Rank 1) capital projects can be funded. You should continue to do the same for each of the normal replacement.



It may be that all classes of capital projects cannot be funded. If projects within a particular class cannot be funded, for example, Rank 3, discretionary, then some decision will have to be made concerning which project(s) within the class should be programmed and which project(s) will be deferred until a later time. The strategy here is two-fold: (1) maximize the financial benefits or return on system/local resources, and (2) maximize the non-financial benefits. These can be conflicting objectives when evaluating competing projects and the resultant capital program and budget may be a compromise. Projects which are self-sufficient should be given high priority. If these criteria

do not produce clear results, judgements using other criteria often prove to be the best procedure in making a determination. Where applicable, consider such criteria such as:

- Safety,
- Service Quality/Reliability,
- Security,
- Passenger Environment/Comfort Convenience,
- Ridership, or
- Regional Development.

Finally, it is important that passengers and client benefits be considered above the public transportation system itself. After all, the transportation system is only a means for passengers and clients to attain more important goals.

### ***Estimate General Funding Revenue***

The final step in the development of the budget is to estimate the general funding revenue which is not specific to one program. For example, funding provided by the state department of aging to provide transportation services to the senior citizen's center would not fall into this category. Instead, it would be included in the analysis of the revenue derived from the senior citizen's center program. However, if the state department of transportation agrees to provide funding of any deficits incurred provided the transportation operator meets certain requirements, then the forecasted revenue from this general funding would be included in this category.

To continue the Gordon County Coordinated Transportation System example from above, assume that you believe, based on preliminary discussions with two local businesses, that these companies will provide general assistance of \$2,250 each to GCCTS. This will be general funding revenue and will reduce the deficit to \$3,500. Now, assume that the local government has agreed to provide general assistance, up to \$5,000, to cover any deficit that the system incurs. Since the forecasted deficit is \$3,500 the local government funding would be forecasted to be \$3,500. This general funding revenue would be included on the budget and the new budget would look like Table 5-9.



Table 5-9

## GCCTS BUDGET FOR YEAR ENDING DECEMBER 31, 1992

	1992 Budget
<b>Revenues:</b>	
Program Revenue	\$104,000
Local Business Support	4,500
Local Government Support	3,500
<b>Total</b>	<b>\$112,000</b>
<b>Expenses:</b>	
Direct Costs	70,700
Overhead Costs	41,300
<b>Total</b>	<b>\$112,000</b>
<b>Net Income</b>	<b>\$0</b>

### **Explicitly List Major Assumptions**

The first page of every budget should list the major assumptions used in the preparation of the budget. This accomplishes two goals. First, when anyone reviews the budget, that person can start by reviewing the major assumptions and decide immediately whether they agree. For example, one of the major assumptions in the example of the bus route budget was that three new bus routes would be added in June. This would be one of the first assumptions listed. If the budget is reviewed by an individual on the organization's board who did not believe any routes should be added, then the issue to be discussed is immediately narrowed down to the propriety of adding the new routes.

The second goal accomplished by starting the budget with the assumptions is that it forces the people reviewing the budget to decide which assumptions need to be changed instead of just changing the amounts in the budget. For example, someone may review the budget and decide that the forecast for drivers' wages is too high. If the assumptions are not listed, the reviewer may just change the amount to a lower figure. However, if it is stated in the list of assumptions listing that drivers' wages are based on estimated vehicle hours times the current hourly wage for drivers plus an estimated raise of four percent, then the reviewer must decide which assumption he or she disagrees with instead of merely changing the final number. Does the reviewer believe that there will be no raise, or that the estimated vehicle hours are too high? By explicitly listing the assumptions on the first page of the budget, reviewers are forced to examine the budget and its interrelationships in more detail instead of making arbitrary changes to the budget.

Every revenue and expense item should be supported with solid assumptions. Simply estimating the item is not much more than a guess. The assumption can be as simple as "usage of office supplies will continue to increase at the three percent rate that has

occurred during each of the past two years". The underlying assumption must be consistent with all other assumptions. For example, if one assumption is that the accounting department will triple in size during the year, then the assumption that office supplies will increase three percent would not be consistent.

The items that you would want to include in the assumptions listing can be separated into four general categories: 1) changes to revenue producing operations, 2) method of calculating forecasted revenue, 3) changes to expenses, and 4) method of calculating forecasted expenses. Some examples of each category may help to clarify the idea.

- I. Changes to revenue producing operations:
  - A. New bus routes.
  - B. Discontinuing the van service to the hospital.
  - C. Providing a new service to transport local grade school children to the community center for recreation after school.
- II. Method of calculating forecasted revenue:
  - A. Expected increase in passenger miles times the negotiated rate per passenger miles for new programs.
  - B. Last year's number of passengers increased by five percent due to certain explicit external factors (e.g., the economy).
- III. Changes to expenses:
  - A. Hiring of additional drivers.
  - B. A new contract for the maintenance of vehicles.
  - C. Increased repairs expected due to the advancing age of the vehicles.
- IV. Method of calculating forecasted expenses:
  - A. Certain expenses calculated as a percent of revenue.
  - B. Gasoline expense calculated as expected vehicle miles times expected vehicle miles per gallon times expected gasoline price per gallon.

Basically, the assumptions spell out the thought process that was used to arrive at the budgeted amounts. The best format for the assumptions is to list them in the same order that the item they are explaining appears in the budget. Usually revenues would go first, followed by expenses in the same order in which they appear in the budget. A brief example of an assumptions listing is found in Table 5-10 on the following page.

### **Major Assumptions**

- 1. Administrative staff will ...**
- 2. Vehicle hours will ...**

Table 5-10

GORDON COUNTY COORDINATED TRANSPORTATION SYSTEM  
BUDGET FOR THE YEAR ENDING DECEMBER 31, 1992  
LISTING OF MAJOR ASSUMPTIONS

REVENUE ITEMS:

Bus Route Revenue:

1. Three new bus routes will be added in June.
2. The number of students at the local college is expected to decrease five percent in 1992. Bus route revenue was reduced by five percent due to this anticipated decrease.

Van Service to the Senior Citizen's Center:

1. A new senior citizen's center will open in September. The number of passengers per day is expected to increase nine percent once the new center opens. In addition, the average miles per passenger per trip is expected to increase from 3.6 miles to 4.4 miles because the new center is further from the main senior citizens' apartment buildings.

Van Service to the Community Day Care:

1. Both the number of passengers and the revenue per passenger is expected to remain constant.

General Funding:

1. Two local businesses have agreed to provide general assistance of \$2,250 each. The remaining general funding will come from the local government who has agreed to fund the deficit of the organization up to a maximum of \$5,000.

EXPENSE ITEMS:

1. Direct labor is based on estimated vehicles miles (shown on page X of the budget) times the current average wage rate of \$5.50 plus a \$0.20 anticipated pay increase.
2. Fuel and other direct costs is based on estimated vehicle miles divided by 10 miles per gallon times \$1.30 (\$1.04 per gallon for fuel plus \$0.26 per gallon for other costs).
3. Vehicle repairs expense is expected to increase due to additional repairs related to the additional bus routes and the advancing age of the vehicles. These increases will be offset by anticipated savings due to a new deal with a local mechanic to repair the vehicles at a reduced rate.
4. Starting January 1, employees will pay for a portion of their health insurance and other benefits. This is expected to net savings to the organization of \$1,500.

**Pull It All Together  
into a Budget Form**

The contents of the budget package should include the following:

- The list of assumptions
- An overall budget
- A budget for each program.

If the number of programs is fairly small, the overall budget and the budget for each program can be combined onto one page with each program having a separate column. Using the amounts from the earlier example, budget for an organization with three programs as shown in Table 5-11 could be prepared.

Table 5-11

**GORDON COUNTY COORDINATED TRANSPORTATION SYSTEM:  
1992 BUDGET**

	Bus Routes	Vans to Senior Citizens Center	Vans to Community Day Care	General Revenue and Expenses	Total
Program Revenue	\$38,000	\$42,000	\$24,000	\$ -	\$104,000
Local Business Support				4,500	4,500
Local Government Support				3,500	3,500
<b>Total Revenue</b>	<b>38,000</b>	<b>42,000</b>	<b>24,000</b>	<b>8,000</b>	<b>112,000</b>
<b>Direct Expenses:</b>					
Operators' Wages	12,600	13,600	9,200		35,600
Operators' Fringe Benefits	3,200	3,400	2,300		8,900
Vehicle Repairs	1,858	1,749	1,093		4,700
Fuel and Other Direct Expense	8,500	8,000	5,000		21,500
<b>Program Margin</b>	<b>\$11,642</b>	<b>\$15,251</b>	<b>\$6,407</b>	<b>\$8,000</b>	<b>\$41,300</b>
<b>Overhead Costs</b>					
Admin. Salaries & Wages				26,000	26,000
Admin. Fringe Benefits				4,500	4,500
Property & Other Taxes				5,000	5,000
Office Supplies				800	800
General Insurance				4,000	4,000
Other Direct Costs				1,000	1,000
<b>Total Overhead Costs</b>				<b>\$41,300</b>	<b>41,300</b>
<b>Net Income</b>					<b>\$0</b>

An alternative to this budget would be to allocate the overhead costs to each program so that each program would show a net income. The potential pitfall with this option is that it may distort the analysis of the profitability of an individual program. For example, assume that the overhead costs are allocated to each program based on the percentage of revenue derived from each program. The new budget would look like Table 5-12.



Table 5-12

**GORDON COUNTY COORDINATED TRANSPORTATION SYSTEM:  
1992 REVISED BUDGET**

	Bus Routes	Vans to Senior Citizens Center	Vans to Community Day Care	General Revenue and Expenses	Total
Program Revenue	\$38,000	\$42,000	\$24,000	\$ -	\$104,000
Local Business Support				4,500	4,500
Local Government Support				3,500	3,500
<b>Total Revenue</b>	<b>38,000</b>	<b>42,000</b>	<b>24,000</b>	<b>8,000</b>	<b>112,000</b>
<b>Direct Expenses:</b>					
Operators' Wages	12,800	13,600	9,200		35,600
Operators' Fringe Benefits	3,200	3,400	2,300		8,900
Vehicle Repairs	1,858	1,749	1,093		4,700
Fuel and Other Direct Expense	8,500	8,000	5,000		21,500
<b>Program Margin</b>	<b>\$11,642</b>	<b>\$15,251</b>	<b>\$6,407</b>	<b>\$8,000</b>	<b>\$41,300</b>
<b>Overhead Costs</b>					
Admin. Salaries & Wages				26,000	26,000
Admin. Fringe Benefits				4,500	4,500
Property & Other Taxes				5,000	5,000
Office Supplies				800	800
General Insurance				4,000	4,000
Other Direct Costs				1,000	1,000
<b>Total Overhead Costs</b>				<b>\$41,300</b>	<b>41,300</b>
Allocation of Overhead Cost	15,397	15,826	10,277	(41,300)	0
<b>Net Income</b>	<b>(\$3,755)</b>	<b>(\$375)</b>	<b>(\$3,870)</b>	<b>\$8,000</b>	<b>\$0</b>

By doing this, the Bus Routes program (the column on the left) shows a net loss in the "net income" row at the bottom of the table. Does this mean that the organization would be more profitable if the bus route program was discontinued? NO! The reason is that not all the overhead costs that have been allocated to the bus route program would be eliminated. That is why the budget that does not allocate the overhead costs gives a better picture of the transit operations. The results of all the various revenue producing operations, plus general revenues, must cover the organization's total overhead costs.

## **BUDGETS AS A CONTROL MECHANISM**

If an organization has a larger number of programs, then each program may need to have a page for that program's budget. The two primary problems with this method are that it is bulkier to review and slightly more difficult to see the overall picture. However, sometimes there is no other way to prepare the budget.

This concludes the section on preparing the budget. At this point, you have seen how to estimate the revenues and expenses that comprise the budget and how to put together a simple budget. The next section will demonstrate the use of the budget as a control mechanism.

During the course of the year, the budgeted amounts should be compared to actual amounts at the end of each month to identify potential problems. Then possible solutions to these problems can be identified. Care must always be exercised to note that the variance between the budget and actual is not the problem, it only signifies that a problem may exist. The reason or reasons for the variance must be determined to decide whether a problem exists.

For example, if actual legal expense for a year is three times greater than the budget, whether or not a problem exists depends on the reason for the variance. If the organization is sued for \$20,000,000 by a motorist injured in an accident, then legal costs must be incurred to defend the suit. Does this represent a problem? There is still not enough information to decide. Was our driver at fault? Did the driver have a good driving record? What were the weather conditions? If after investigating the entire issue, it is determined that the driver was not at fault and the case is expected to be dismissed, then there is no underlying problem or solution. On the other hand, if it was determined that a driver who has had a terrible driving record caused the accident, then the problem would be the driver and three possible solutions would be to (1) replace this driver with a better driver, (2) train the current driver to be a better driver or (3) change the review process for drivers to ensure that drivers with poor records do not continue to drive.



To use budgets as control mechanisms, you should understand the following topics:

- What is a variance?
- The approach to avoid (the Sledgehammer Approach).
- The proper approach (identifying problems and recommending solutions).

- Revising the budget.
- One format for budget comparisons.

### **What Is a Variance?**

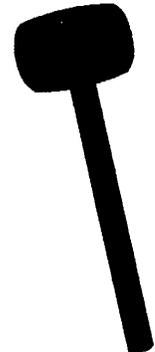
A variance represents the difference between the budget for a line item and the actual amount. The variance can be considered favorable or unfavorable. A favorable variance occurs when actual revenue exceeds budgeted revenue or when actual expense is less than budgeted expense. An unfavorable variance would be the opposite: actual revenue is less than budgeted revenue or actual expense exceeds budgeted expense. Graphically:

	<u>FAVORABLE</u>	<u>UNFAVORABLE</u>
REVENUE:	Actual > Budget	Actual < Budget
EXPENSE:	Actual < Budget	Actual > Budget

These variances also follow a logical approach. Since it is typically better to receive more revenue and incur less expense, these are considered favorable variances. On the other hand, since it is typically worse to receive less revenue and incur more expense, these are considered unfavorable variances. More information on variance analysis is presented in Chapter 9.

### **The Approach to Avoid (The Sledgehammer Approach)**

The sledgehammer approach is comprised of two actions. First, blame is placed on someone for any unfavorable variance. Second, this person is then verbally pounded for creating the unfavorable variance and told to correct the problem. This is not the proper use of a budget. Individuals are often blamed for variances which they cannot control, could not have prevented, and cannot correct. This lowers employee morale and often creates more problems than are solved.



### **The Proper Approach**

A much better approach is to constructively define the problem (not the person) and recommend a solution if one exists (instead of demanding that the person correct the problem). If a problem is very large and complex, a formal step-by-step problem-solving process may be necessary. The following steps should be considered:

1. Define the problem.
2. Use creativity together to find solutions (brainstorming).
3. Narrow solutions to workable ones.
4. Evaluate and solicit agreement.

5. Set a date to check back.

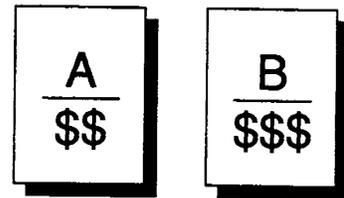
Sometimes, once the problem is identified and analyzed, it becomes apparent that there is no solution. For example, if a van has a major transmission problem, the vehicle repair expense budget will probably be exceeded. Two possible solutions to this variance are:

- Replace all old vans with brand new vans.
- Buy a new brand of vans if there have been problems with the transmissions on the current brand.

The first solution is probably not feasible for most organizations due to the cost. The second solution does not solve the problem of having to repair the vans currently owned. In this case, there is not a solution to the variance. The only question that needs to be answered is whether the budget should be updated to plan for additional repairs due to the transmission problem.

In the vast majority of cases, a solution can be determined and recommended. For example, if actual insurance expense exceeds the budget, then the insurance policy may need to be reviewed to determine if the cost can be reduced.

Another insurance company may provide lower rates, or possibly certain deductibles may be increased. On the other hand, increasing deductibles on vehicle insurance may lead to increased vehicle repair expense since the organization must pay the higher deductible after any accident.



In summary, the following steps represent the proper approach to using budgets as a control mechanism:

1. Identify the underlying cause of the variance. Stating that vehicle repair expense increased due to additional repairs being performed is not enough. The question of why the additional repairs were needed has to be answered. Was there a major problem with a vehicle which is now fixed? Or did a new driver get involved in a large number of accidents? The resulting solution would be very different depending on the answers.
2. Determine possible solutions, if any, to correct the cause of the variance. In the above example, if the unfavorable variance in the vehicle repair expense was due to a single major repair which is now fixed, then no solution may be needed. If a new driver was involved in a number of accidents, then maybe the driver needs more training or a new driver needs to be hired.
3. Decide which solution is considered best by all relevant staff and policy-makers.

4. Present the appropriate people in your organization with your recommended solution, as well as your alternative solutions.

## ***Revising the Budget***

Sometimes, the result of the analysis of a variance is that the budget needs to be revised based upon additional facts and circumstances. Budget revisions should be approached with extreme caution and used sparingly. Strong justification must be presented for the budget to be revised. The budget should only be revised in situations where large variances will continue unless the budget is revised. Some examples of situations where updating the budget might be necessary are:

- A new contract is received which will provide additional revenue which was not expected when the budget was prepared.
- A major change to an assumption (e.g. a new plant opens in the city and the population doubles within a month) occurs which will have a pervasive impact on the budget.
- A specific major factor occurs which will continue into the future.

Revisions to the budget should be rare. When they are necessary, the revised budget should be reviewed and approved by everyone who reviewed and approved the original budget. The changes to the original budget should be highlighted and explained.

## ***One Format for Budget Comparisons***

The specific format which your organization will use to compare budgeted results to actual results is up to the preferences of the individuals involved in the process. The format shown in Table 5-13 is merely one format that can be used. Note that it allows for comparisons of both monthly and year-to-date amounts. Showing monthly and year-to-date amounts facilitates the explanation of monthly variances which are due to the revenue or expense occurring in a different month from the one budgeted.

Table 5-13

**GORDON COUNTY COORDINATED TRANSPORTATION SYSTEM  
VARIANCE ANALYSIS FOR THE MONTH OF JUNE, 1992**

Month of June			Year-to-Date			
Actual	Budget	Variance	Actual	Budget	Variance	
			<b>Revenues:</b>			
\$1,681	\$1,850	(\$169)	Bus Routes	\$17,928	\$16,600	\$1,328
3,872	3,500	372	Sr. Citizens	22,094	21,000	1,094
2,908	3,200	(292)	Day Care	8,872	10,500	(1,628)
450	450	0	General	2,500	2,500	0
8,911	9,000	(89)	Total	51,394	50,600	794
			<b>Expenses:</b>			
3,575	3,600	(25)	Driver Wages	20,581	20,000	581
1,763	1,750	13	Fuel & Other	9,613	9,500	113
520	470	50	Repairs	2,762	2,850	(88)
2,196	2,160	36	Adm. Wages	13,121	13,000	121
400	400	0	Prop. Taxes	2,476	2,500	(24)
57	70	(13)	Supplies	322	400	(78)
392	370	22	Health Ins.	2,382	2,250	132
302	330	(28)	Gen. Ins.	1,873	2,000	(127)
83	80	3	Other Costs	511	500	11
9,288	9,230	58	Total	53,641	53,000	641
(\$377)	(\$230)	(\$147)	Net Income	(\$2,247)	(\$2,400)	\$153

As stated earlier, this is only one possible format for an actual to budget analysis. Whatever format works best for the individuals involved should be used.

The budget process described so far, line item historical cost budgeting, is the most common form. There are other types of budgets which are useful for some specific purposes. Two other types of budgets are discussed very briefly in this section:

- Variable budgeting
- Zero-based budgeting.

In the budgeting process that has been described so far (line item historical cost budgeting), one forecast is made for each revenue and expense item and the starting point for the forecast is the actual results from prior years. A **variable budget** divides each expense line item into two components: a fixed component and a variable component. The fixed component will not vary with revenue while the variable component varies directly with revenue.

The expense budget can then be prepared based on various estimates of revenue. The equation to determine the expense budget is:

## **OTHER TYPES OF BUDGETS**

### **Variable Budgets**

$$\begin{aligned}
 & \text{Budgeted revenue} \\
 & \times \text{Variable budget (expressed per dollar of revenue)} \\
 & = \text{Variable portion of expense} \\
 & + \text{Fixed portion of expense} \\
 & = \text{Total budgeted expense}
 \end{aligned}$$

The easiest example to illustrate this concept is a salesperson's commission structure. Assume that a salesperson is paid \$200 per week plus ten percent of all sales. The variable component is the ten percent of sales and the fixed component is \$200 per week. The salesperson's budget could be set for three different revenue forecasts as shown in Table 5-14.

Table 5-14

VARIABLE BUDGETS FOR  
THREE DIFFERENT REVENUE FORECASTS

Forecasted Revenue per Week	\$6,000	\$8,000	\$10,000
x Variable Budget per Revenue Dollar	10%	10%	10%
= Variable Portion of Budget	600	800	1,000
+ Fixed Portion of Budget	200	200	200
= Total Budgeted Expense per Week	\$800	\$1,000	\$1,200

Some expenses may not have both a variable and a fixed portion. For example, if the salesperson shown above is paid only ten percent of all sales and did not receive the \$200 per week, then the expense related to his salary would be completely variable. If revenue went down to zero, then so would the expense. Gasoline expense is an expense which is practically 100 percent variable for most transportation operators.

Other expenses are completely fixed. Using the salesperson example again, the salary would be completely fixed if the salesperson received \$200 per week and did not receive a percent of sales as commission. An example of a cost that is often 100 percent fixed is rent expense. If your organization pays \$1,000 per month for rent, then this expense would not vary at all as revenue varied. Accordingly, the rent expense would be completely fixed at \$1,000 per month.

A variable budget normally shows the organization's budgeted results at a number of different revenue levels. A computer is practically a necessity to properly use a variable budget. The formula for each expense is put into the computer and then the expense budget will change as the revenue budget is changed. This allows management to forecast the organization's earnings at various revenue levels. This

provides a good feel for the impact of revenue levels on the organization's performance.

A second benefit of a variable budget is as a control mechanism. Using a line item historical cost budget, the explanation for many of the expense variations will be variations in revenue. Using a variable budget, the actual revenue is entered and a budget showing estimated expenses for that revenue level can be prepared. The actual expenses can then be compared to the estimated expenses for the revenue level obtained.

## ***Zero-Based Budgeting***

**Zero-based budgeting** became modestly popular during the late 1960s through the early 1980s. Its use has diminished since this time. However, the transportation manager may still need to prepare a zero-based budget at some point.

The concept behind zero-based budgeting is that every operation must justify its existence for the upcoming year. Using the line item historical cost budgeting process, the starting point for the current budget is the prior year's actual results. These results are then built on by analyzing any anticipated changes during the upcoming year.

Using zero-based budgeting, the starting point for each revenue and expense line is zero. Management must decide whether each program or expense is sufficiently worthwhile to occur in the future. Nothing is assumed to occur merely because it has occurred in the past. The goal is to take a fresh look at the organization and each operation within the organization to determine whether it should operate and at what level it should operate.

As an example, assume that an organization operates nine bus routes throughout the city. Instead of assuming that these bus routes should continue next year, various alternatives would be identified and analyzed. A budget would then be prepared for each viable alternative. Some alternatives might be:

- Provide only three routes instead of nine.
- Change to a Dial-A-Ride service instead of continually running fixed bus routes.
- Include new routes that travel from the center of the city to various locations in neighboring cities.
- Discontinue bus service. Transport passengers in taxis. Provide user-side subsidies to those passengers who qualify as "eligible" for subsidies.

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A whole list of alternatives could be developed. The basic concept behind zero-based budgeting is that there are alternative ways to achieve a given end and program managers should take a look at those alternatives on a regular basis.

## **CONCLUSION**

This budgeting chapter is the final chapter in the financial planning section. These chapters are important in order to obtain an understanding of how an organization is performing and ways to improve the performance. The next section will be on cash management issues. Cash management is vitally important to every organization and business that has ever existed. Companies do not go bankrupt because they have a loss; they go bankrupt because they do not have enough cash. As long as there is cash available to pay the bills as they come due, a company can continue to operate. Similarly, a transportation organization can operate unless it runs out of cash.



# ***CASH MANAGEMENT ISSUES***

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Cash is one of the most precious resources for rural and small urban transportation systems; therefore, it is essential that a system's cash be handled and managed closely and carefully. Separate chapters in the **Cash Management Issues** section include Revenue Handling and Cash Management.

- **Revenue Handling**
- **Cash Management**



# **Chapter 6: Revenue Handling**

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Fare accountability and controls are an important aspect of cash management. This chapter describes the methods, vulnerabilities, and recommended procedures which pertain to fare collection, consolidation, storage, counting, and cash depositing processes. Protection and security of fare revenue is a fundamental consideration of cash management.

Another key piece of a solid cash handling system is control over deposits of cash and checks. This includes procedures for maintaining control over cash before it is deposited, procedures related to actually depositing cash, and procedures for maintaining control over investments.

- **Fare Accountability and Controls**
- **Fare Collection**
- **Fare Consolidation and Storage**
- **Before the Deposit**
- **Controlling the Deposit**
- **Control Over Investments**
- **Conclusion**



## **FARE ACCOUNTABILITY AND CONTROLS**

The loss of fare revenue through internal and external theft as well as fare evasions and shortchanging is a matter of increasing concern to transportation managers and public officials. There are not many statistics or facts to determine how much public transportation fare revenue is actually lost through employee theft and evasion or shortchanging of fare payments. Some estimates have placed industry losses at 15 to 20 percent of total collected revenue. There is much evidence and many stories to support the notion that fare revenue loss is common and widespread.

This section describes common public transportation practices of fare collection and handling, identifies vulnerabilities, and provides security recommendations to retard and arrest losses. Among small urban and rural public transportation systems, good management practices concerning revenue security are often inhibited by the lack of resources and personnel. While these small systems may seem immune from the problems of systems in larger urban areas, you should know that there have been cash handling problems -- resulting in revenue losses -- in small systems, too.

## **FARE COLLECTION**

A fare structure is the combination of rates charged per passenger trip, which may be dependent on variables such as trip length or time of day or type of rider. Fare structures and collection methods were extensively described in Chapter 3.

## **Vulnerabilities**

The collection of fares can be a vulnerable process. Passengers may evade paying fares or shortchange the amount of fare paid. Abuse of fares by passengers can be fairly common, especially in cases where the public transportation system does not use registering fareboxes. (While there is some feeling that fare evasion is more frequent in urban than rural areas, rural operators also need to be vigilant regarding this problem.) The following are brief descriptions of possible fare evasion tactics used by public transportation passengers:

- **Passengers may use expired or otherwise invalid transfers, may deposit slugs or foreign coins into the farebox or may deposit invalid or used tickets.**
- **Passengers may use discount tickets, tokens, or passes when not eligible for such a privilege. Public transportation systems are especially vulnerable to this abuse in cases where they employ liberal eligibility criteria and/or liberal requirements for proof of qualification.**
- **Passengers may not pay the full fare including the practice of depositing the incorrect amount of change in the farebox, such as substituting nickels for quarters.**



According to a recent Federal Transit Administration study, employee theft of revenue is considered "a common problem at all public transportation systems regardless of size or type." No fareboxes, lax farebox controls, or lack of surveillance provide the opportunity for thefts by employees, especially when dollar bills are involved. Opportunities for skimming by employees on-board the vehicle include the following activities:



- **Vehicle operators may handle fares directly.** This most often involves the vehicle operator pocketing fares given directly to him or her, especially dollar bills, rather than depositing them in the farebox. This problem is compounded when the transportation system operates vehicles without fareboxes (as do many rural and human service transportation systems).
- **Vehicle operators may retain cash within the farebox above the inspection plate.** Operators can accumulate cash above the inspection plate to enable "fishing" (that is, removal of cash with a metal/wooden rod or similar probe while deadheading or while the vehicle is parked in the yard) if they do not dump the inspection plate.
- **Vehicle operators may gain unauthorized access to the farebox vault.** This involves removing and/or switching vaults if a driver has access to vault keys.
- **Operators may skim revenue from jammed fareboxes.** In collusion with maintenance personnel, vehicle operators can purposely jam fareboxes. When the maintenance person, who has access to the vault keys, clears the jam, the vehicle operator and maintenance personnel can skim revenue from the vault.
- **Vehicle operators may park the vehicle and return to it later to steal funds from the vault.** This abuse is most likely to happen at public transportation systems that do not vault all or most of their vehicles daily.
- **Vehicle operators may "loan" employee or dependent passes to, or acquire employee or dependent passes for, friends or family members who are not authorized to use them.**
- **Vehicle operators also have the opportunity to skim revenue during special events** when the use of regular fare collection equipment is impractical.
- **Vehicle operators may not require fare payment by friends or relatives.**

## ***Recommended Fare Collection Procedures***

For maximum revenue security, all public transportation buses and vans should be equipped with fareboxes containing key-lockable vaults. Further, all drivers should be required to count boarding passengers, by fare type. This should not present problems to demand-response drivers who normally maintain logs of their passenger and travel activity. For fixed route service, multiple button passenger counters may be mounted on the driver side of fareboxes to facilitate easy use as the passengers board buses. Drivers should record all counter readings at the beginning and end of their run or work assignment. This information serves not only to provide valuable passenger counts but also as another check on the receipt of fares and should be compared to the count of farebox revenues.

Some rural and human service providers use make-shift fare collection devices (such as cigar boxes) to hold passenger fares during the trip or throughout the day. This practice creates a great potential for theft or revenue mismanagement. While purchasing manufactured fareboxes creates a real capital outlay for small transportation systems, the expense is often justifiable in terms of increased revenue security.

To reduce the potential of vehicle operator theft or at least improve the probability of prosecution for theft, management should verify that vehicle operators understand the consequences of deviating from the prescribed procedures and stealing, and where necessary, establish such policies. Employees should be required to sign an affidavit stating that they have read and understand such policies. Affidavits should be kept on file and retrieved whenever a question arises as to whether or not the employee had been appropriately advised of company policy. Such information should be included in an employee handbook.

Management also should enforce the requirement that vehicle operators inspect each fare and transfer in order to verify that the correct fare has been paid. It is essential that vehicle operators inspect each fare in public transportation systems that employ manual fareboxes. Vehicle operators' vigilance is virtually the only way to prevent short-fares and passenger abuses.

To reduce the incidence of farebox vault switching and unauthorized vault entry, the public transportation system should maintain a perpetual inventory of fareboxes, vaults, and keys. As a first line of defense against the unauthorized use of vault keys and probes, management should maintain strict control of the distribution of keys, farebox seals, and probes. Additionally, management should:

- develop procedures to ensure all revenue is removed from fareboxes before any repairs are initiated;
- store all fare media, including transfers, in a secured location; and
- monitor and record all vault-pulling activities to reduce the probability for collusion among employees.

## **FARE CONSOLIDATION AND STORAGE**

### ***Vulnerabilities***

### ***Recommended Fare Consolidation and Storage Procedures***

To reduce the opportunity for transfer abuse among vehicle operators, your transportation system should track the issuance, receipt, and return of transfers on a regular basis. Control and secure the distribution, return, disposal, and storage of used and unused transfers as well as access to transfers.

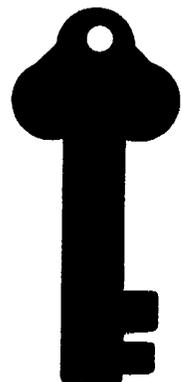
The retrieval of fare revenue from fareboxes and the transfer of that revenue to a central counting location is termed fare consolidation and storage. The method used to pull the farebox vault can vary depending on whether the transportation system uses one vault or two vaults. In the two-vault system, the full vault is exchanged with an empty vault that is placed on the vehicle. The full vault is taken to the counting location where the revenue is counted. In the one-vault system, each vault should be taken to the counting location where the vault is emptied and the revenue counted. The vaults are then taken back to the vehicle and replaced in the fareboxes.

Vulnerabilities within the transportation system fare consolidation procedures vary according to the practices of each individual transportation system. The following are possible revenue vulnerabilities in the farebox consolidation process:

- Security in revenue consolidation areas may be inadequate to deter internal and external theft.
- Vaults may be accessible without a key.
- Key inventory and control may be weak or ineffective.
- Vaults may not be pulled and emptied daily.
- Vaults may not be stored in a secure manner and inventory may be ineffective.
- There may be no effective means of control for vaults and fareboxes in need of repair.

All vaults should be emptied and their funds secured before vehicles are sent in for repairs. Additionally, all equipment should receive routine preventive maintenance, whether vaults are pulled and replaced with empty vaults or emptied into receiver vaults.

- All vaults should be removed from vehicles daily. Ideally, funds should be removed from vehicles each time they return to base.



## **BEFORE THE DEPOSIT**

### ***Prenumbered Receipts Should Be Issued for All Money Received***

### ***Two People Should Be Involved in All Cash Collections or Transfers***

- Strict key control should be maintained. Keys that are necessary for the vaulting operation should be under the control of management.
- Vault pulling keys should be logged in and out as needed by management.

Prenumbered, duplicate receipts should be issued for all cash received from a customer or a donor or as a subsidy from a governmental entity. The only exception is for cash received in a farebox. The controls over farebox receipts were discussed earlier in this chapter. The original receipt should be given to the person from whom the money was received and the duplicate should be retained by the transportation operator for control purposes. The receipt will verify that both the party making the payment and the transportation operator agree that the amount on the receipt was received by the transportation operation.



Periodically, a comparison should be made of the duplicate receipts with the amounts actually deposited in the bank to ensure that all money received was deposited.

Whenever possible, two people should be involved whenever your cash is being collected or transferred. This provides additional control and protects the individuals involved. An example will help to highlight the advantages of involving two people.

*Assume that an individual driving a bus without a farebox collects \$600 during his shift. He puts the money in a bag, hands it to the bookkeeper and leaves. The bookkeeper then counts the money to deposit it and only counts \$500. In this situation there are all kinds of possibilities. Did the driver miscount the money the first time? Did the bookkeeper miscount the money (although this can be tested by re-counting the money)? Did the driver actually collect \$600 but take \$100 out before turning the money over to the bookkeeper? Did the bookkeeper take out \$100 before counting the money? If there is more than one driver, did the bookkeeper count the money collected by the right driver? As you can tell, this is a very bad situation for everyone involved. The organization is missing \$100. The driver and bookkeeper are both subject to accusations. What could prevent this type of situation from occurring?*



*If the driver brings the money to the bookkeeper and both people count the money together, then all the uncertainty would be resolved. If they jointly count \$600, then the driver has proof that*

*he turned over \$600 to the bookkeeper. On the other hand, if they jointly count \$500, then the bookkeeper has proof that he only received \$500 from the driver.*

Receipts in the form of checks should be promptly endorsed with a restrictive endorsement ("for deposit only to the account of ...") immediately upon receipt. Once a check is endorsed, there is much less chance of the check being misappropriated. The endorsement should be made by the person first opening the mail or receiving the check.

For Deposit Only  
First National Bank  
Account #10000001  
Green Valley Transit

The deposit ticket should be prepared in detail to show the source of the cash being deposited. This detail will make it much easier to resolve any questions or problems with a deposit.

### **Checks Should Be Restrictively Endorsed Promptly upon Receipt**

### **Deposit Tickets Should Be Prepared in Detail**

## **CONTROLLING THE DEPOSIT**

### **Make the Deposit Daily**

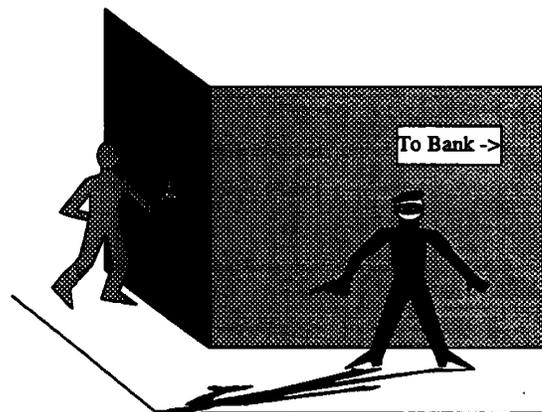
The key to controlling deposits is to make them immediately. The longer that cash and/or checks are kept on the premises, the greater the chance that the money could be lost, misplaced or stolen. Once the deposit is made, there is no longer any risk related to the physical handling of the cash and/or checks. This point deserves special emphasis. It is a very simple control -- deposit cash and/or checks daily -- but it can save many problems. The practice of daily deposits can also increase the transportation system's interest earned on its funds.

### **Assign the Responsibility for Making the Deposit to One Person**

One person should be made responsible for ensuring that all cash and/or checks are deposited in the bank daily. If that person is unable to personally make the deposit, then it is still the responsibility of that person to arrange for another individual to make the deposit and to follow-up with the other individual to make sure that the deposit was actually made. When the person with this responsibility is on vacation or sick, another individual should be assigned the responsibility for the deposits on a temporary basis.

### **Vary the Route to the Bank**

As a precaution, the same route should not be taken to the bank every day. One technique that robbers use is to "scope out" a business, the time deposits are usually made and the route taken to the bank. Varying the route will not eliminate the chance of a robbery; however, it will reduce the chance.



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## **CONTROL OVER INVESTMENTS**

### ***Making the Investment Decision and Accounting for the Investments***

One individual should be placed in charge of making the investment decisions for the organization (see the investments section in Chapter 3 for a discussion of investment options). This person must be knowledgeable of the plans and goals of the organization, particularly the goals for investing excess cash.

A separate individual should also be placed in charge of accounting for the investments. The investment statements and confirmations should be sent directly to this individual, who should reconcile them to the accounting records for the investments, much as a bank reconciliation is performed. After being reconciled, the confirmations and statements can be forwarded to the individual in charge of making the investment decisions for use in making future investment decisions.

Segregating the investment decision function from the investment accounting function will help to eliminate the opportunity for errors or misappropriations.

### ***Approving the Investment Decision***

Responsibility for approving investment decisions may be dependent upon the structure of your individual organization. Some entities may have a Board of Directors which will want to approve any investment decision. Regardless of the organization structure, one or more persons in management should be responsible for approving the investment decision.

### ***Executing the Investment Decision***

Only one or two people in the organization should be authorized to execute investment decisions. The authorized individuals should be separate from the individual who is in charge of accounting for the investments.

### ***Physical Handling of Investments***

Most investments will result in the organization receiving a document signifying their investment. These documents need to be safeguarded. One way is to open a safe deposit box at a local bank and store all the documents in this box. Access to the safe deposit box should be restricted to certain individuals. The bank maintains a record of the name, date and time of anyone who uses the safe deposit box. Another option would be to have the bank act as custodian for the investment documents. Banks normally charge a fee for this service.

## **CONCLUSION**

This chapter provides guidance on how to handle cash so that it is secure from the time it has been received through its deposit or investment. Revenue security is a hallmark of a well-managed transportation system. The next chapter describes how small urban and rural transportation systems can get the best use out of the cash they have received and deposited.



# **Chapter 7: Cash Management**

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Good cash management is crucial to the health of small urban and rural transportation systems. Good cash management will ensure that cash is available when needed at a reasonable cost, and that interest or other income from available cash is maximized. This chapter describes the symptoms of poor cash management and describes how to set up a good overall cash management system.

- **Cash Management Objectives**
- **Symptoms and Costs of Poor Cash Management**
- **A Good Overall Cash Management System**
- **Conclusion**



## **CASH MANAGEMENT OBJECTIVES**

### ***Cash Availability When Needed***

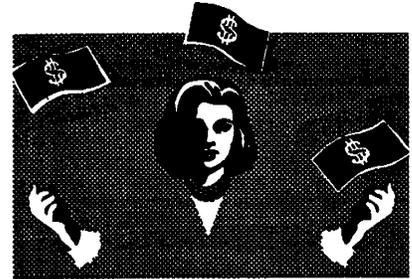
### ***Minimize Cost of Cash Availability***

### ***Use Available Funds to Full Potential While Minimizing Risk***

Cash management may be defined as establishing effective cash collection, deposit, and disbursement procedures to maximize the amount of cash and cash availability. Three principal objectives of good cash management are to:

- have sufficient cash available when needed;
- minimize the cost of cash availability; and
- use available funds to full potential while minimizing risk.

Cash is the medium through which any business -- including any transportation service -- is transacted. Without cash in sufficient quantities, a business stops. Therefore, the primary objective of cash management is to have cash available when it is



needed and in the amount which is needed (no more, no less). This won't occur by chance. It will only occur through a concentrated effort to manage cash properly. If this primary objective is to be met, the transportation manager must know first, what cash will be presently available, and second, what cash will be available in the future. In other words, accurate cash reporting and accurate cash forecasting are essential to financial planning and management. Competent service plans and capital investments are not possible unless cash flows can be accurately identified and estimated since decisions to be made relating to these areas are all contingent upon the ability to obtain cash in sufficient quantities to finance them.

The achievement of the first objective, the availability of cash when it is needed and in the amount needed, does not signal the end of good cash management responsibility. The first objective can be obtained at a wide range of cost to the transportation system, and this is where the second objective of cash management, to minimize the cost of obtaining cash through the use of efficient cash management techniques and effort, becomes a factor. Proper use of these methods allows cash to be available when it is needed, while still minimizing interest expense and/or maximizing interest income.

Excess funds that remain idle are unproductive. Remember, cash is an asset only when it is in use. Idle cash could be earning a return if invested. Various investment opportunities must be considered including both internal system investments, which should provide public benefits, and external investments, which might yield a financial return. While small urban and rural systems rarely have excess funds, a balance between benefits or investment return and risk must be considered. Investing public funds in any fashion must be done with minimal risk.

## **SYMPTOMS AND COSTS OF POOR CASH MANAGEMENT**

### **Obvious Symptoms**

There are certain telltale situations which indicate that cash is being managed poorly. These situations may be divided into two categories: obvious symptoms and not-so-obvious symptoms.

The obvious symptoms of poor cash management include:

- **Inability to execute planned operations due to lack of available funds.** Planned inventory purchases, retirement of debt, fixed asset additions, etc. may have to be postponed or canceled if funds are not available.
- **Frequent unexpected cash shortages.** These stem from a lack of short- and/or long-range financial planning. Forecasts of cash flow and cash requirements must include short-term operational requirements but must interface with long-term financing requirements.
- **Frequent unexpected over-withdrawals of bank accounts.** These may be indicative of excess number of accounts with poor information feedback or of poor planning in terms of when cash will be received.
- **Repeated sporadic short-term borrowings to meet obligations.** This situation generally results in excessive interest charges and can be attributed to establishing a minimum targeted cash balance which is too low in terms of changing conditions.



### **Not-So-Obvious Symptoms**

The not-so-obvious symptoms of poor cash management include:

- **Excessive accounts receivable collection time.** Collection and credit policies may need revision. Cost-effectiveness of discounts for early payment and penalties for late payment should be assessed.
- **Unnecessary delay in availability of deposited funds.** A four- to five-day delay in availability is considered to be excessive and may be indicative that too much reliance is placed on the policies and practices of the bank where funds are deposited.
- **Inadequate utilization of bank services.** Limited use of administrative services offered by the bank (lock boxes, draft payment plans, depository transfer checks, zero balance accounts, wire transfers, etc.) can be indicative of inadequate utilization of valuable services.

## **Costs of Poor Cash Management**

Some potential costs of poor cash management include:

- **Inability to continue service due to cash and borrowing constraints.** Services may be reduced, halted, or interrupted and capital investments delayed due to shortages of available funds.
- **Damaged vendor relations.** Vendors cannot be paid if funds are not available, and this could be detrimental to good vendor relations and hamper future business with them.
- **Loss of confidence in bank relations.** The confidence a bank has in a public transportation system has a direct impact on the bank's willingness to lend money to that system.
- **Inability to borrow at a reasonable interest rate.** In most cases, unplanned short-term borrowing can only be obtained at a premium interest rate, resulting in a higher interest expense.



## **A GOOD OVERALL CASH MANAGEMENT SYSTEM**

Achieving an effective overall cash management system and maintaining it is not as easy as people may think. Small urban and rural transportation systems have to understand the elements of a good cash management system and how to best develop and utilize important tools to accomplish sound financial management.

There are five key elements of most effective cash management systems. These elements are:

- Cash flow management
- Excess cash investment
- Cash flow forecasting
- Daily cash report
- Bank selection and credit establishment.

Each of these elements are discussed below together with management procedures and techniques.

## **Cash Flow Management**

Managing cash flow has three principal components including managing cash inflow (receivables, including grants), managing cash outflow (payables), and analyzing the results of cash flow. Each of these areas is briefly discussed below.

### **Managing Cash Inflow**

The objective of managing cash inflow is to maximize liquidity (the ability to use your assets on very short notice) by expediting cash inflow. This is accomplished by minimizing the time delay between

the delivery of service and the ultimate availability of collected cash from any client, agency, or supporting organization. This cycle may be divided into four periods, each of which can be influenced by good cash management.

**Invoicing period** is the time it takes to process the invoice and get it to the client or agency. Transportation systems should minimize delay between delivering service and invoicing. Send progress bills to agencies and clients when longer term commitments preclude complete delivery or invoicing in the short run. Be sure to properly identify the proper billing address. Send invoices as frequently as allowed, particularly to your largest clients (for example, the state department of transportation).

Transportation systems must take great care to submit grant applications for funds correctly and on time. Unlike invoices for service, grant funds might **never** be received if the grant application is late or incorrectly prepared. Grant funds are also unlike invoices in that they can often be in the system's account before the expenses are actually incurred. Some systems may also receive advance funds for service from agencies that contract for services. In both cases, grants and advance funds, care should be taken to **control the rate of expenditures** so that the funds last throughout the intended period.

**Holding period** represents the length of time the invoice is held by the client or agency before payment. Once the invoice is received by a client, it is usually to their advantage to delay payment as long as possible. Certain inducements and/or pressures can be applied to encourage prompt payment and reduce the holding period. These include:

- enclosing a self-addressed stamped envelope with each bill to encourage clients or agencies to pay more promptly; and
- having a manager inquire politely when payment may be expected prior to the actual due date rather than only requesting or demanding payment after the due date has passed. This approach is known as the "tickler method".

**Collection period** is the time between the client's mailing of the remittance and the actual receipt, and recording of that remittance. Collection float is the time between the client or agency mailing of the remittance and deposit of funds by the transportation system. Collection float can be reduced by reducing in-house processing time for cash receipts.

**Clearance period** refers to the time between the deposit of client or agency checks and the availability of funds in the transportation system's depository account. The time lapse depends greatly on the time required for the depository bank to present checks for payment (generally through the Federal Reserve System).

The availability float factor (number of days between deposit and usable funds) is calculated differently by different banks. The two most common methods are:

- **Dynamic Float Factor.** Depository bank determines float by assigning a factor of availability on an item-by-item basis (i.e., waits for each check or item to clear);
- **Averaging Float Factor.** The time before funds are available is determined by the average lapse of time between depositing checks and the availability of these funds to the bank. This average is periodically calculated by the depository bank based on mixture of deposits. The average factor is then assigned to all deposited items.

Depending upon the nature of checks deposited by the transportation system, one of the above options could be more beneficial and the depository banks should be contacted to determine the best method. Collected funds should be concentrated in one cash account to reduce overall minimum balance requirements and accumulate funds for possible investments.



### **Managing Cash Outflow**

The objective of effective management of cash outflow is to delay as long as possible the disbursement of cash. Disbursements should be scheduled, discounts appropriately managed, and deposits made to a master funding account.

A master payment aging schedule should be established for all vendor invoices. This schedule should indicate due dates and amounts due and highlight discounts. Invoices should not be paid prior to the due date (unless a discount is taken as discussed below), but no later than that date since vendor goodwill and a good credit rating are important.

Vendor discounts should be viewed as an internal investment alternative. For example, the payment terms of 2%/10, net 30, actually represents an annual interest percentage return of 36 percent. This percentage results from the fact that by giving up the cash 20 days earlier than the "net 30" due date, two percent is saved (thus,  $360 \text{ divided by } 20 \times 2\% = 36\%$ ). Vendor discounts should be assessed in light of excess cash on hand and other investment alternatives. If a discount is not taken, the invoice should not be paid until the final due date as noted above.

### **Analyzing Cash Flow Results**

Cash inflow and outflow time periods may be computed to determine whether or not cash flow results are favorable. The average accounts receivable collection period is computed in two steps: (1) the annual

service credit extended to clients or the total annual amount of invoiced services is divided by 360 days to yield the average daily amount of service credit; and (2) the average daily credit revenues are divided into the accounts receivable balance to determine the number of days service credit revenue is tied up in receivables.

***Average Collection Period***

$$\text{Service credit per day} = \frac{\text{Total Annual Service Credit}}{360 \text{ Days}}$$

$$\text{Average collection period} = \frac{\text{Accounts Receivable}}{\text{Service Credit/Day}}$$

A similar analysis can be performed to calculate the average accounts payable payment period where 1) the annual cost of purchases (fuel, parts, materials, services, purchased transportation, etc.) is divided by 360 days to yield the average cost of purchases per day; and 2) the average daily purchase cost is divided into the accounts payable balance to determine the number of days purchases are in accounts payable.

***Average Payment Period***

$$\text{Purchase cost per day} = \frac{\text{Annual Purchase Cost}}{360 \text{ Days}}$$

$$\text{Average payment period} = \frac{\text{Accounts Payable}}{\text{Purchases Per Day}}$$

To the extent that the average collection period exceeds the average payment period, the transportation system is, in effect, extending net credit to clients and agencies and incurring the related opportunity cost.

***Excess Cash Investment***

Often, the result of an effective cash management system is the availability of surplus cash. A good overall cash management system should have a defined plan of action of what to do when excess cash becomes available. The longer cash lies idle, the greater the transportation system's potential loss of income. This section reviews the investment considerations that were discussed in detail in Chapter 3.

***Internal vs. External Investment***

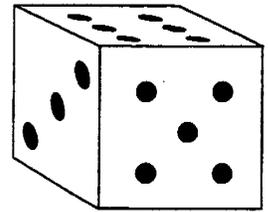
If the transportation system generates excess cash, a decision should be made concerning whether an internal or an external investment is more appropriate. Examples of internal investments include: increasing services, investing in new or improved capital facilities, early retirement of debt, discounting vendor payables, etc. Although internal investments can generate benefits which are often measurable, they do not generate income, per se. However, overall



## **External Investment Criteria**

cost to the transportation system, whether it be tangible or intangible, can be reduced through any decreased borrowing activity.

While most public transportation systems do not enjoy surplus cash positions, it is briefly worth identifying external investment criteria which should be considered in the event that such cash is available.



**Safety** is the first consideration when making an investment. In order to ensure the safety of public funds, transportation systems should consider restricting themselves to marketable instruments that remain relatively stable in price and are sponsored by either a government agency (e.g., Treasury Bills, Treasury Notes, etc. which are considered the safest) or a reputable organization (e.g., commercial paper, certificates of deposit, etc.). Safety is usually inversely proportional to yield. In other words, the greater the return, normally the greater the risk.

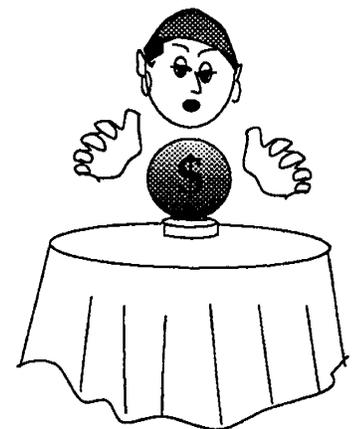
**Liquidity** is a major consideration since surplus cash is available primarily for short-term investment. It should be possible, in case of need, for transportation systems to convert the investments into cash on short notice. Most commercial paper and certificates of deposit are redeemable immediately.

**Maturity** is another important criteria to consider in making external investments with excess cash. Short maturities are often preferred when organizations intend to use the invested cash for an operational purpose or capital investment sometime in the near future.

**Yield** can be significant, particularly when larger cash investments are contemplated. To obtain higher yields within the limits of safety and public policy requires careful selection of investment opportunities.

## **Cash Flow Forecasting**

Accurate forecasting of cash flow is a vital element of an effective system of cash management. Forecasting is used to predict when excess cash will be available for investment and when borrowing will be needed. This fundamental financial tool can also be used to identify problem areas (e.g., slow cash receipts) which require corrective action.



### **The Need to Forecast**

There are a number of common excuses (none of them valid) not to forecast cash flows. Some of these include:

- **"The future is too uncertain."** Forecasting attempts to predict the outcome of uncertain future events will never be perfect. A "best attempt" forecast is better than none at all.

- **"Forecasting requires too much time."** Preparation of a manual cash forecast is actually quite simple, not overly time consuming, and well worth the effort. If the complexity of the organization requires extensive effort, computer application may be appropriate.
- **"I know what I am doing without forecasts."** This typical response translates to "I have been successful previously without a formal plan so I'll probably continue to be" -- an interesting premise without much promise.

Predictions of cash flow are precisely that --- predictions. The expected results generated by a forecasting procedure are only as good as the assumptions and budgeted data upon which they are based. Forecasts should be based on the most current financial data available which should be revised and updated regularly.

A well-developed cash forecasting system should address both short-range and long-range needs. A short-range cash forecast should cover a period of one year or less and should be updated regularly. Long-range forecasting should cover an extended period of time (e.g., three to five years).

Short-range, operational cash flow forecasting provides the basis to assess any short-term credit needs which govern short-term investment and borrowing decisions. Projected cash balances allow for advance arrangement of favorable credit terms (minimizing interest costs) or assessment of investment alternatives (maximizing return on investment).

Long-range cash forecasting focuses on long-term financial needs and interfaces with overall capital expenditure programs and strategic operational planning. Strong long-range planning results in sound financing decisions and development of adequate lines of long-term credit.

One of the more accurate and widely used forecasting methods is the cash receipts and cash disbursements method. Utilizing this method, the net inflow or outflow for the period must be determined. This is done by identifying the sources of cash (e.g., farebox revenues, cash receipts on services, grants, etc.) and identifying the uses of cash (e.g., accounts payable disbursement, payroll, fringe benefits, taxes, material, services, etc.) for the respective period.

Upon forecasting what cash inflows and outflows, add/deduct the amounts to your cash balance at the beginning of the month to arrive at your projected cash balance at the end of the month.

Depending upon minimum cash requirements at the end of the month, an excess of cash may result, whereby an investment could be made, or a deficit may result, whereby borrowing may be appropriate.

## **Forecasting Method**

## **Analyzing Forecast Results**



Variance of actual results from those forecasted should be closely analyzed to identify potential problem areas requiring remedial action. Such problems could include overspending of budgets and slow cash collections. Regular meetings of the Board of Directors finance committee and key management staff should be held to review long-range developments to ensure proper interface of these two areas.



The fourth element of effective cash management is the daily cash report. The report does not have to be overly complicated. The items to be shown for each bank account are, in order: opening balance, deposits for the day, disbursements for the day, interbank transfers, adjustments, and closing balance.

### **Daily Cash Report**

This report shows the transactions from the bank's point of view, that is, the balances are the balances on their ledgers, the deposits are the ones the bank credited to your account and the disbursements are the checks actually cleared. To maintain a daily cash report requires daily telephone communication with the bank. Making these daily calls may be bothersome, but an effective job of cash management cannot be accomplished by watching the transportation system's book balances because they do not portray the right picture.

Smaller transportation systems without large daily cash transactions will not need to create cash reports as often as daily.

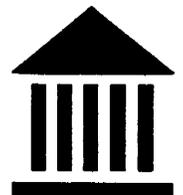
As a side benefit to a daily cash report, items to be reconciled may be discovered and work can be started immediately to clear them up.

### **Bank Selection and Credit Establishment**

The fifth element of an effective cash management system, the selection of a bank and the arrangement of on-going credit relationships, is often not given adequate consideration.

The banking industry is constantly evolving, developing new services and attracting new customers. In this highly competitive time, banks must offer services of the highest quality, competitively priced.

On the other hand, organizations are trying to develop good relations with banks, because there are always going to be times when an unexpected cash shortage develops and the transportation system may need a cash loan in a hurry. Therefore, in choosing a bank, one of the main considerations should be what type of on-going credit arrangements can be agreed upon.



Other questions you should ask yourself before choosing a bank are:

- Are services compatible to the transportation system's needs?

- Is the bank conveniently located?
- Is the bank responsive to the transportation system's needs?
- Is the bank competitively priced?
- Is the information they provide adequate for the financial management of the transportation system?

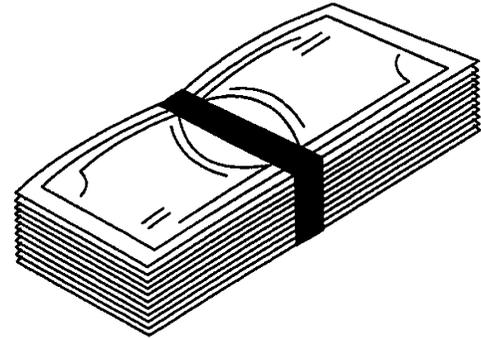
Once answers have been received to these questions, the transportation system should be in a position to make a decision on which bank can provide the best service.

Once a decision has been reached, it is in the best interest of the transportation system to maintain a good relationship with the bank. Also, an on-going evaluation should be performed to evaluate the services received for the price to ensure value is being received from the bank.

## **CONCLUSION**

Good cash management should be one of the primary goals of rural and small urban transportation systems. Poor cash management can lead to increased expenses or decreased services and can threaten a system's existence. Managing cash inflow and outflow and performing accurate cash flow forecasting

will greatly improve a transportation system's fiscal health. Cash management is the second of the three key financial management functions, the first being financial planning, and the third -- discussed in the next two chapters -- being monitoring and analysis.



# ***MONITORING & ANALYSIS***

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Monitoring and analysis are major activities in the control of an organization. They comprise the third major group of financial management functions. Monitoring and analysis activities include monitoring performance (service outputs as well as resource inputs), reporting to Boards of Directors and others, comparing actual to expected costs (variance analysis), and using professional audits.

- **Financial and Performance Reporting**

- **Audits**



# **Chapter 8: Financial and Performance Reporting**

The results of the operations of a transportation system can be expressed in financial (monetary) and non-financial (performance) terms. These kinds of information are crucial for the managers, funders, and directors of the transportation system, as well as members of the community being served, in order to answer such basic questions as "Are the funds being spent wisely?", "Are the goals and objectives being met?", and "Do changes need to be made?" Income statements and performance summaries are key tools for transmitting the required information to those who need the information. Variance analysis is a technique for determining why expenses and revenues may not have come out just as expected.

- **Reporting Periods and Audiences**
- **Income Statement**
- **Variance Analysis**
- **Performance Summary**
- **Conclusion**

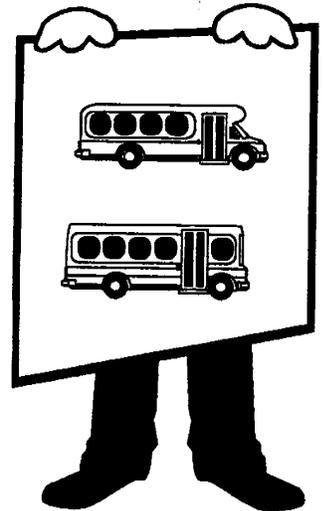


## **REPORTING PERIODS AND AUDIENCES**

### **Reports to Funding Sources**

Financial reporting is a key management activity. Financial and performance reporting will be required by funding sources. At some systems, reports to the Board of Directors are required by policy or ordinance. At other systems, reporting to the Board is not formally required, but often is the focal point of discussions between management and policy makers. Reports to system users and the general public are also an excellent public relations procedure for you to consider.

Most small urban and rural public transportation systems will derive some portion of their funding from federal, state, or local government programs and will, therefore, need to account for how these funds are spent. For example, those systems receiving Section 18 funds will probably be required to submit full financial and performance reports to their state department of transportation annually; many states also require abbreviated reports on a quarterly basis. Transportation systems should pay close attention to the required schedule of reports to funding agencies, as non-reporting can lead to a loss of eligibility for future funds.



Many small urban and rural transportation providers will need to comply with federal auditing and reporting requirements according to the directives of the Office of Management and Budget (OMB). OMB Circular No. A-128 describes procedures for implementing the Single Audit Act of 1984 with respect to audits of states and local governments that receive federal aid. It establishes audit requirements for state and local government federal aid recipients, and defines federal responsibilities for implementing and monitoring those requirements. A-128 supersedes the audit requirements of Circular A-102, "Uniform Requirements for grants to state and local governments." A-128 requires annual audits performed by an independent auditor that test internal control mechanisms and compliance with laws and regulations. The Single Audit Act provides that an audit made in compliance with Circular A-128 will satisfy financial or compliance audits required under any federal assistance program.

OMB Circular No. A-133 establishes audit requirements for institutions of higher education and other nonprofit institutions receiving federal funds. It supersedes portions of Circular A-110 that dealt with auditing and reporting by such institutions. A-133 requires audits that are "usually... performed annually but not less frequently than every two years." Audits made in compliance with A-133 will satisfy financial or compliance audit requirements under any federal assistance program. Audit reports under A-133 must include:

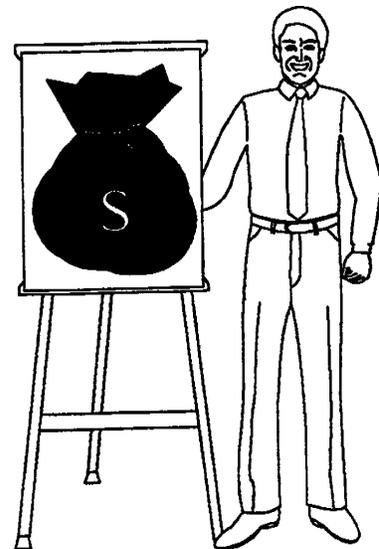
- the financial statements and a schedule of federal awards and the auditor's report on the statements and the schedule,
- a written report of the independent auditor's understanding of the internal financial control structure and the assessment of control risk, and
- the auditor's report on program compliance.

In general, any transportation provider receiving more than \$100,000 per year in federal funds will have to comply with all the reporting requirements of either A-128 or A-133. Rural and small urban transportation providers should obtain copies of these regulations from their state departments of transportation or OMB and should be familiar with the provisions included in these regulations.

## ***Reports to the Board of Directors***

Boards of Directors are the key policy making bodies of public transportation systems. The responsibilities and duties of the Board of Directors are to:

- determine the transportation system's mission and set policies for its operation, ensuring that the provisions of the organization's charter and the law are being followed;
- set the transportation system's overall program from year to year and engage in long-range planning to establish its general course for the future;
- establish fiscal policy and boundaries, with budgets and financial controls;
- provide adequate resources for the activities of the transportation system through government grants, direct user payments (fares), revenue service contracts with other agencies and other public sector organizations, and private sector agreements;
- select, evaluate, and, if necessary, terminate the appointment of the chief executive or general manager; and
- develop and maintain a communication link to the community, promoting the transportation services of the organization.



Normally, Boards of Directors should not engage in the day-to-day operation of the transportation system, hire staff other than the chief

executive or general manager, and make programmatic decisions without consulting the chief executive and/or staff.

The responsibilities and duties of the Board of Directors require management to report information regarding the activities and performance of the transportation system. Frequent reporting to the Board (monthly is recommended) offers two major benefits:

- **It provides a basis for and strengthens communication between management and policy makers.** Since most board members do not have a background in public transportation, they often initially have difficulty providing management direction. Since Board Members are generally familiar with financial reports in their own jobs, the reports provide a familiar vehicle for communication.
- **It gives the Board an opportunity to make mid-course corrections as conditions change.** Many rural and small urban providers find it important to take prompt corrective actions when costs, revenues, and passengers do not materialize as planned and budgeted. Often, a small change made quickly and early in a fiscal year can help avoid a major change later in the year.

It is recommended that financial reporting consist of two types of reports:

- an income statement in which budgeted versus actual expenditures are compared, and
- a performance report in which actual results versus standards in key measures of performance are compared.

## ***Reports to the Public***

While few small transportation systems prepare reports for their local community (system users and local sponsors), this procedure is highly recommended. Using information prepared for the "official" monitors, brief fliers or handouts could be prepared for the general public as an important part of a good comprehensive public relations campaign. Financial and performance results should be reported in such a fashion once a year, and can be summaries of information given to the Board of Directors or the funding agencies.

Annual reports typically present a short message from the Board of Director's chairperson to the public about the activities of the past year and plans for the future, a section by the Chief Executive discussing the transportation system's service operations and performance trends, financial statements (operating statement and balance sheet), and a brief statement provided by an independent auditor.

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## ***INCOME STATEMENT***

An income statement is a summary of the revenues generated and expenses incurred during a specific period of time. It is recommended

that the income statement be summarized in the same line item detail as the Board-approved budget, but at no greater detail than the Accounting Consortium Chart of Accounts. (See Appendix A.)

Reporting at this level of detail is important because it provides a good dividing line between policy and management responsibilities. This level of detail suggests that the Board should be concerned about the magnitude of revenues and expenses as compared to the budget. The absence of operations details, however, suggests that it is management's responsibility to address how performance can be improved.



There are a number of important comparisons that should be made in the income statement. In particular, the Board (and others) will want to know if current revenues have been received and expenses have been incurred in line with the budget, or if unexpected revenues and expenses have been experienced. (This kind of investigation is called "variance analysis" and is explained in detail in the next section.) The important comparisons include:

- **This period (e.g., month) line item revenues and expenditures versus last year's values.** This comparison alerts the Board to anything unusual that occurred during the previous period and is not due to the time of year.

For example, revenues may fall normally in August because of impacts of hot weather and people taking vacations. Therefore, revenues falling below the average for the year may not be cause for concern unless these revenues are also significantly lower than those for the same period last year.

- **Year-to-date line item revenues and expenditure versus budgeted and last year's values.** This comparison shows how the system is performing at this point in the fiscal year. Again, last year's values are shown to provide a sense of the seasonal impact on the values.

For example, the year-to-date values at the end of June reflect the midway point of a calendar fiscal year. Line items that exceed 50 percent of their budget values may be cause for concern. However, even though the casualty and liability premium expense account is at 93 percent of its budgeted value, it is not a concern because last year it was at a similar level. This occurred because the provider pays nearly all of its premiums annually in May.

Line items with significant variations from budgeted amounts should be highlighted on the income statement. The criteria should reflect the importance of the line item to the overall budget.

For example, the criteria might be both greater than five percent and over \$500 of the budgeted amount for the period. If the provider is midway through the year, this means that the budgeted amount for the period would be one-half of the annual budgeted amount.

- **Budgeted line item revenues required for the remainder of the fiscal year and funds remaining.** This comparison is made to give a sense of the revenues available to cover expenses over the remainder of the fiscal year.

## VARIANCE ANALYSIS

The comparison of actual expenditures with expected (budgeted) expenditures is one of the most important financial monitoring and analysis activities. Many successful business operations make these comparisons monthly so that they can meet their goals and objectives with minimum disruption to operations.

Budget	
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Actual Costs	
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

This comparison or "variance analysis" is a simple technique that rural and small urban transportation systems can readily apply. For many transportation system managers, it constitutes documenting a thought process that is second nature to them.

The variance is the difference between actual and expected expenses and revenues. Variances can be favorable (higher revenues, lower expenses) or unfavorable (lower revenues, higher expenses). Unfavorable variances at the line item account level are the focus of most analyses.

There are two reasons to conduct variance analysis throughout the operating year:

- **to identify and adjust to unanticipated changes before they significantly affect the operating budget.** For example, fuel expenditures may be higher than budgeted. If you discover this in the first month of the year, you may have to cut service levels by one percent to compensate for the increased costs. If you wait until the beginning of the twelfth month, you will have to cut service levels eleven percent.
- **to learn more about how costs and revenues change.** You will prepare better budgets as you learn more about the factors that affect costs and revenues.

There are two factors to consider when deciding if you examine a variance:

- **materiality** or significance in terms of the overall budget. You should only spend time analyzing variances that make a

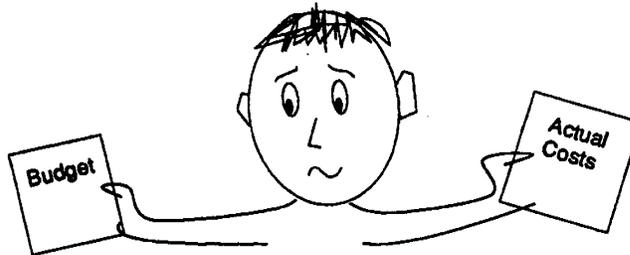
difference. For example, the criteria to examine a variance might be that it be greater than five percent and over \$500 of the budgeted amount for the period.

- **normal fluctuation** or consistency with past performance. This is important for expenses that are not paid every month throughout the year. The previously-mentioned example of the casualty and liability premium expense account at 93 percent of its budgeted value at the end of June, the midway point of the year, is an example of normal fluctuation. This was determined to be not a significant concern because last year it was at a similar level because the provider pays nearly all of its premiums annually in May.

## **Price and Quantity Variance Analysis**

A useful way to begin variance analysis is to examine how changes in price and quantity assumptions have affected your line item expenses. Budgets are often based on assumptions regarding the unit price of an item and the quantity of items that will be purchased. For example, you may have budgeted \$100,000 for fuel expenses this year. This was based on two assumptions:

- a fuel price of \$1.00 per gallon; and
- annual usage of 100,000 gallons.



At the end of three months, you learn that fuel expenses are \$26,740, \$1,740 more than was expected ( $\$25,000 = \$100,000/4$ ) at this point of the year. You would like to examine this unfavorable variance.

The total variance can be broken into two partial variances: the price variance and the quantity variance. The **price variance** is the difference between the expected and actual unit price times the actual quantity. For this example, assume you found that:

- the actual price was \$0.99 per gallon; and
- the actual usage was 27,010 gallons.

The price variance is calculated as:

$$\begin{aligned}
\text{Price Variance} &= (\text{Expected} - \text{Actual Unit Prices}) \\
&\times \text{Actual Quantity} \\
&= (\$1.00/\text{gal} - \$0.99/\text{gal}) \\
&\times 27,010 \text{ gallons} \\
&= \$270.
\end{aligned}$$

The \$270 is a favorable variance and indicates that a difference between expected and actual unit prices was not the cause of the unfavorable variance.

The **quantity variance** is the difference between the expected and actual quantity times the expected unit price. For this example, the quantity variance is calculated as:

$$\begin{aligned}
\text{Quantity Variance} &= (\text{Expected} - \text{Actual Quantities}) \\
&\times \text{Expected Unit Price} \\
&= (25,000 \text{ gallons} - 27,010 \text{ gallons}) \\
&\times \$1.00/\text{gallon} \\
&= -\$2,010.
\end{aligned}$$

The -\$2,010 is an unfavorable variance and indicates that a difference between the expected and actual quantities was the reason for the unfavorable fuel expense variance.

The total variance is the sum of the price and quantity variances. In this example, the favorable price variance (\$270) somewhat reduced the impact of the unfavorable quantity variance (-\$2,010) and produced a total variance of -\$1,740.

## Possible Solutions

The variance analysis points to either or both unit price and quantity consumption as budget problems. The next step is to further analyze these areas to determine if there are solutions that are within your control.

If you discover that there are solutions within your control, you implement these changes as soon as possible. In this example, you may find that excessive idling has increased fuel consumption and issue new procedures which will reduce idling.

You might also find that there are no solutions within your control. If this happens, you must adjust the budget to compensate for the added expenses. For example, you may find that the increased fuel consumption is the result of the purchase of less efficient vehicles. After talking with the manufacturer and other transportation providers, you conclude that nothing can be done to improve fuel efficiency.

Therefore, to compensate for these additional fuel costs, you adjust the budget by postponing a planned renovation of a minor area of your operating garage.

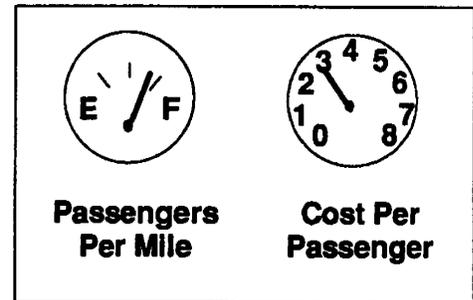


## PERFORMANCE SUMMARY

The times at which financial reports are made to the Board are also good opportunities to present key measures of performance. The financial results presented in the income statement, by themselves, do not present the entire picture of a provider's performance. After all, a provider may be on-target in terms of its expense budget, but if it is not carrying many riders, is it really meeting its mission?

Performance measures help assess how well the established goals and objectives of the transportation system are being attained. As previously discussed (see Chapter 2, Goals and Objectives), performance measures should be directly linked to the system's goals through measurable objectives. Standards, which specify the acceptable or desired level of objective achievement, provide a definitive basis for the assessment. It is recommended that the Board receive performance information in the following areas:

- **Cost efficiency** answers the question **How much does it cost to produce a unit of service?** It is suggested that the performance indicator **operating cost per hour** be used because the largest proportion of costs (i.e., wages and salaries) are paid on an hourly basis.
- **Service effectiveness** answers the question **How many passengers ride for every unit of service provided?** It is recommended that the performance indicator **passengers per hour** be used instead of **passengers per service mile** because the speed of service varies greatly with the type of service provided.
- **Cost effectiveness** answers the question **How much does it cost to carry one passenger?** The obvious measure is the performance indicator **operating cost per passenger**. This aspect of performance is affected by the combined impact of cost efficiency and service effectiveness. Mathematically, it is the indicator **operating cost per hour** divided by the indicator **passengers per hour**.
- **Financial equity** addresses the question **How much does the local community pay of the service costs?** The performance indicator **passenger revenues as a percent of operating costs** is the recommended measure. Passenger revenues include both passenger fares and contract revenues. Local community contribution includes local government operating funds.
- **Service quality** answers the question **Does the service meet the expectations of its customers?** It is not only important that service be delivered as advertised, but that it satisfies passengers



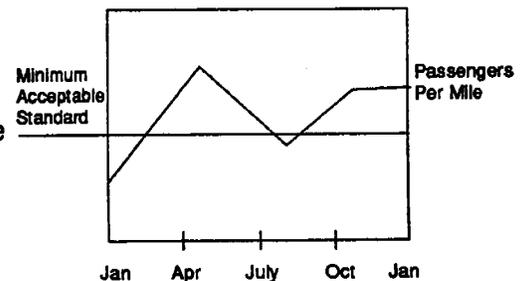
and contract clients. One way to gauge the level of customer satisfaction is to measure the number of **complaints per passenger**, by type of complaint. This permits an analysis of the areas requiring management's attention such as driver behavior, service reliability, and vehicle cleanliness.

Two fundamental service quality attributes are safety and reliability. A basic safety performance measure is the number of **passenger injuries per passenger trip**. A fundamental reliability measure is **on-time trips as a percent of total trips**.

Chapter 11 provides a detailed discussion of a wide variety of performance measures. Specific standards for the key performance measures are also shown in Chapter 11.

## Graphical Presentation

If possible, you should present the performance indicators graphically instead of in tables. This helps the Board quickly assess the performance of the system and its components.



The results should be plotted by month both for the current year and for corresponding months of the prior year. This helps the Board see trends in performance and the impact of seasonal fluctuations. For example, it may see an overall improvement in on-time performance from last to this year, but a consistent decline in performance during the winter months.

If the transportation system does not have performance standards, the Board of Directors is encouraged to adopt them as a means of answering the question **What is good performance?** This will make the job of both the Board of Directors and management easier when performance issues are discussed.

## CONCLUSION

Financial reporting is important to funding agencies because they are accountable to the public for the worthiness of tax dollar investments. It is equally important to Boards of Directors who make policy and provide direction to the public transportation system. Financial and performance reporting is important for management to track performance and provide alternatives and options to improve service performance. Lastly, it is important for the public to know about the effective use of their tax dollars. Internal monitoring by a system's managers is crucial, but so is external monitoring, as explained in the next chapter on auditing.



# **Chapter 9: Audits**

An important monitoring tool is an independent audit, which is performed by a Certified Public Accountant who is not employed by the transportation organization, but by an accounting firm. Thus, the audit is properly considered to be an external review. This chapter explains how to go about selecting an auditor and briefly describes some common information the auditor needs and common problems encountered during the audit. It outlines how to interpret the auditor's opinion on financial statements.

- **Auditing Fundamentals**
- **The Choice of an Auditor**
- **The Audit Process**
- **The Audit Opinion**
- **Types of Audit Opinions**
- **Conclusion**



## **AUDITING FUNDAMENTALS**

### ***What is an Audit?***

An audit is a series of procedures performed on select transactions, account balances and internal control features of the accounting system. These procedures must be performed under the supervision of a Certified Public Accountant (CPA). Because not every transaction is examined, the auditor selects transactions necessary to form an opinion on the overall fairness of the presentation of the financial statements. The auditor will exercise some judgement to determine how many items need to be tested to assess the fairness of the financial statements.

The end result of the audit is that the auditor will issue an opinion on the fairness of the financial statements. The audit opinion does not state that the financial statements are "correct" or "accurate." Instead, the opinion states that the financial statements present fairly, in all material respects, the financial position of the organization.

An audit is another component of your monitoring process. In this case, the monitoring is being performed by individuals outside of your organization. The audit should be the final check in the monitoring process. If errors go undetected by the control system of your organization, then the audit may be your last opportunity to catch them. Since the audit does not test every transaction that occurred during the year, some errors may go undetected by the audit. The steps performed by the auditor are designed to detect only errors that are material in relation to the overall financial statements.



### ***Auditing versus Accounting***

Auditing means examining transactions and internal controls of the transportation organization. Accounting is the recording of the transactions and development of the internal controls. In other words, **auditing is issuing an opinion on accounting.** As such, if the same person did the auditing and the accounting, then he would be examining his own work. Because of this conflict, the CPA is precluded from providing accounting services and performing an audit on the same entity. This does not mean that the auditor cannot assist your organization in performing the accounting, just that you have to perform the actual accounting. The distinction between assisting the client and performing the accounting is often very hazy and it will be up to the CPA to ensure that the border is not crossed.

If you determine that your organization does not need an audit, but you feel that you need the help of an accountant to prepare the accounting records and/or financial statements, then you could hire either a CPA or an Accountant for this task. The difference between

## **Levels of Financial Review**

the two is that a CPA has been certified by the state after meeting certain educational requirements, passing a two and one-half day examination, and working for a specified time under another CPA. The exact requirements depend upon the state. Only a CPA can sign an audit opinion.

A CPA can perform three different types of services on an organization's financial statements: an audit, a review or a compilation. The **audit** is the most detailed service and requires the most work by the auditor. An audit includes detailed tests of selected transactions and balances. The audit opinion, which will be discussed in more detail later, states that the CPA believes that the financial statements are fairly presented. The audit is the most expensive of the three services, but provides the most assurance.

The second level of service is a **review**, which includes only analytical tests and inquiries of management. Detailed tests of transactions or balances are performed only if the analytical tests and inquiries lead the CPA to believe that a material error may exist. The review opinion states that a review is substantially less in scope than an audit and that the CPA is not expressing an audit opinion. The review opinion also states that, based on the review procedures performed, the CPA is not aware of any material modifications that should be made to the financial statements.

The lowest level of service is a **compilation**. No testing is performed. The CPA merely takes the organization's general ledger and prepares the financial statements from this data. The compilation opinion states that the CPA is providing no assurance that the amounts in the financial statements are correct.

## **Why Do You Need an Audit?**

An audit is required of many transportation operators. In order to receive future funding, they must submit to an annual audit by a CPA. If your system has borrowed money from a bank, often the bank will require an annual audit. Most audits are obtained because they are required. However, an organization that is not required to obtain an audit may want to obtain one to provide additional assurance that there are no material errors in the financial statements and to have an objective third party take a look at the business and its accounting systems and records.

Many transportation organizations could be subject to a number of audits by different entities. The state's department of transportation, various social services departments that pay for transportation services, local government agencies and other entities may all reserve the right to audit the transportation operator. OMB Circular A-128 describes procedures for implementing the single Audit Act of 1984 with respect to federal funds awarded to states and local governments. OMB Circular A-133 describes procedures governing audits for nonprofit institutions receiving federal aid. (For further information, see



## ***Benefits of an Independent Audit***

Chapter 8 or contact your state department of transportation.) Some states have also passed Single Audit Acts which require all entities to accept the auditing results of a CPA firm. The auditor may be required to perform additional testing in this case, but the single audit is still more cost-effective and efficient than having each agency perform a separate audit on the services the transportation operator provides for that agency.

The four main benefits of an audit by an independent CPA are:

- Credibility of the financial statements.
- Professional assistance in financial statement presentation.
- Professional advice on internal control and business matters.
- Assistance in tax reporting and compliance requirements.

When a CPA puts his or her name on the opinion in the financial statements, the credibility of the financial statements is increased. Were it not for auditors issuing their opinions on financial statements, readers would not be able to trust the financial statements, as an organization could put any amount into unverified financial statements. The auditor prevents this by examining support for the amounts in the financial statements. **The credibility which the audit provides to the financial statements is the single most important benefit of an audit.** Transportation operators are competing with other organizations for the limited funds of governmental agencies, other organizations, and the general public. If these entities feel that they can believe the financial story presented by audited financial statements, then the potential contributor is more likely to feel comfortable providing assistance to the transportation operator.



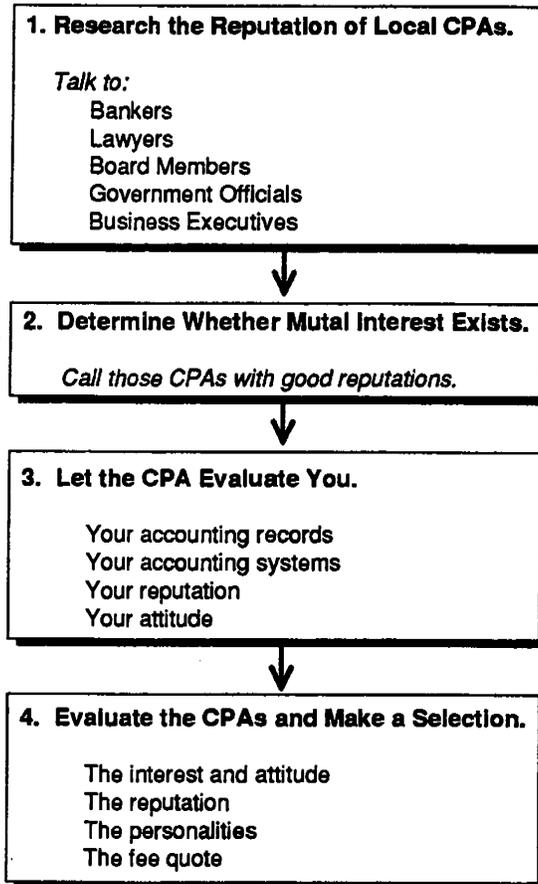
The CPA has experience assisting organizations to prepare clear and understandable financial statements. If the reader of the statements cannot interpret how the transportation operator is performing, then the financial statements are practically useless. The organization and presentation of the financial statements is crucial to their usefulness.

While performing the audit, the CPA may uncover ideas which will improve the organization's internal control system or operational efficiency. For example, the CPA may be able to recommend an improved revenue security policy or a more efficient method of preparing invoices. The experience and ability of the CPA you hire will affect the results you may obtain in this area.

The CPA has often had extensive experience in filing the necessary tax and compliance reports that threaten to bury the transit system in red tape. This assistance can be quite valuable.

## THE CHOICE OF AN AUDITOR

The flowchart which follows shows the process of selecting a CPA.



### Research the Reputation of Local CPAs

CPAs are prohibited from advertising their auditing services (except in the Yellow Pages of the phone directory). Thus, they must depend primarily on word of mouth to spread their reputation. When it comes time to choose a CPA, talk with practically anyone who may have dealt with a CPA to get their opinion.

Bankers, attorneys, board members, government officials, and business leaders can provide useful information on the various CPAs around your area. Gather information on several different CPAs.



### Determine Whether Mutual Interest Exists

Once you have identified several reputable CPAs, call each one, explain your transportation system briefly and ask if the CPA would be interested in learning more about your organization in order to propose to perform the audit. A CPA may not be interested in proposing to perform your audit for a variety of reasons. An individual CPA firm may not perform audits for governmental agencies; or may specialize in one industry; or may only audit companies with a certain level of

## **Let the CPA Evaluate You**

revenue. Be open and honest with the CPA in answering questions. If you are not, you may have to switch CPAs which can raise doubts in the minds of the users of the financial statements.

For an auditor to determine an estimate of the time and cost of your audit, you will need to provide an overview of your system and allow an examination of your accounting system and records. If your financial records are in extremely bad shape, the CPA may feel that it is not worth the potential headaches to do the audit. In addition to evaluating your accounting, the CPA will also be evaluating your organization and its employees. The CPA, by signing the opinion on the financial statements, is exposed to the risk of a lawsuit. Before taking this risk, the CPA wants to know what type of people are running your organization. If the officers are well-respected with no previous problems, then the CPA will feel more comfortable that no "funny business" is occurring. The CPA will start off much more wary, and often will not propose to perform an audit, where the integrity of the officers is in question.

## **Evaluate the CPAs and Make a Selection**

The interest and willingness of the CPA to serve your organization is one of the most important factors to consider in making a selection. From this point forward, you will be working with your CPA on an ongoing basis. One effective way to gain an impression of the CPA's commitment to serve is to send the CPA your financial statements before the interview. Then, during the interview, ask for comments and suggestions on the statements. The amount of homework done will be obvious by the response. Also, the knowledge the individual shows regarding your organization and your industry shows either experience in the industry or the homework done since your original phone call to the CPA.



The CPA with the lowest bid should not necessarily be chosen. Unless the fee quoted is out of line with the other fee quotes, the reputation, attitude and interest of the CPA should be the guiding factors in the selection process. A slightly higher fee to get better service and a better audit is a good tradeoff.

Most CPAs charge on an hourly basis. If the organization's accounting records are in good shape, then the CPA will need to spend less time on the audit and the fee will be lower. No CPA will be able to tell how much time will be involved without visiting your office and taking a look at the accounting systems and records.

The hourly rates that are charged will vary depending upon the experience of the individual assigned. The only accurate way to determine what the audit will cost is to have several reputable CPAs examine your systems and records and provide an estimate of fees and expenses. The CPA will probably emphasize that this is only an estimate -- the final fee will be dependent upon the actual time required to perform the audit. **The better your accounting records and the more assistance you provide, the lower the fee will be.**

## **THE AUDIT PROCESS**

### ***Orienting the Auditor***

The rural and small urban transportation industry is a unique industry. Often, the CPA you select may not have had much experience working on organizations in the transit industry. As part of the audit process, the CPA will need to become familiar with the industry in general and your organization in particular. This process starts when the CPA evaluates you during the selection process and continues every year as the CPA learns more and more about the industry.

The CPA obtains this industry knowledge from a variety of sources including:

- magazine or newspaper articles on the subject,
- books or industry guides, and
- discussions with individuals knowledgeable on the subject.

You can assist the CPA in the process. Once you have selected the CPA, continually share your knowledge regarding the industry, your organization, and any specific reports you may require with the CPA. Typically, the more general information with which the CPA starts the audit, the smoother the audit process will be.

### ***Common Information the Auditor May Request***

It is up to the individual performing the audit to decide what information they want to use for the audit. The list below will give you a general idea of the type of information that may be requested:

- General ledger.
- Bank statements and reconciliations of the bank statements to the general ledger balance.
- Fixed asset records showing, for each individual asset, the date acquired, original costs, depreciation life and method, accumulated depreciation and depreciation expense during the year.
- Accounts payable trial balance (a list of all amounts owed to vendors as of year-end).
- Reconciliation of the accounts payable trial balance to the general ledger balance.
- Contracts with all customers.

These are only a few examples of the information the auditors may need. A good idea is to ask the auditors prior to the start of the audit for a list of schedules and information that they will likely request. Then, go over the list with the auditors to make sure both parties have the same understanding of the information requested. Lastly, make

## **Common Problems During the Audit Process**

sure you have most of these schedules and information completed prior to the start of the audit. This will minimize the time involved to complete the audit as well as the fee charged for the audit.



The audit process can be either efficient and painless or tedious and painful. Typically the difference is due to the recordkeeping practices of the transportation operator. Some of the most common problems which can turn an audit into a nightmare for both you and the auditors are listed below, along with the solutions to avoid the problem:

<u>Problem</u>	<u>Solution</u>
1. Lack of sufficient detail to support accounting entries.	Ensure that a good filing system is in place and keep all pertinent documents filed together.
2. Incorrect accounting entries.	If you are in doubt on how to record a transaction, ask your auditors immediately.
3. Insufficient detail in segregation of hours or miles to programs.	Make sure you know your reporting requirements and can provide the necessary information to meet these requirements. Information on vehicle hours or miles must be obtained and stored daily; it cannot be recreated at the end of the year.

This is obviously not a complete list of all possible problems that may occur. In general, the transportation operator can avoid most problems by thinking of the audit as merely a check-up on the organization's records. The transportation operator should have all the information necessary to perform all the accounting and complete all required reports. The audit can be thought of as an insurance policy for those receiving your reports that the reports were properly prepared.



## **THE AUDIT OPINION**

### **A Typical Opinion**

Here is a typical audit opinion which could appear in a set of audited financial statements. We will call the entity being audited The Transit System.

## Report of Independent Accountants

*We have audited the accompanying balance sheet of The Transit System as of December 31, 1992, and the related statements of income and retained earnings and of cash flows for the year. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audit.*

*We conducted our audit in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.*

*In our opinion, the financial statements audited by us present fairly, in all material respects, the financial position of The Transit System as of December 31, 1992, and the results of its operations and its cash flows for the year in conformity with generally accepted accounting principles.*

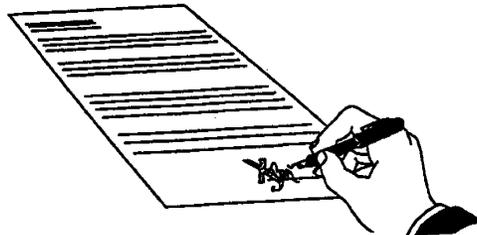
### **Interpreting the Auditor's Opinion**

This opinion is very carefully worded and each phrase has significance. Let us look at the opinion phrase by phrase to understand what is being said. On the left side is the wording in the opinion and in the box to the right is an explanation of the opinion.

*We have audited the accompanying balance sheet of The Transit System as of December 31, 1992, and the*

*related statements of income and retained earnings and of cash flows for the year.*

**This sentence identifies the organization and the time period being audited.**



*These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audit.*

**This sentence refers to the difference between accounting and auditing. The accounting records and financial statements are the responsibility of the management of your organization. The auditor does not take responsibility for the amounts in the financial statements, but merely expresses an opinion on the fairness of the financial statements.**

*We conducted our audit in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial*

**The auditor must conduct the audit in accordance with a wide body of literature and pronouncements. This paragraph states that the audit was conducted in accordance with these pronouncements and proceeds to explain some of the audit work involved.**

*statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.*

*In our opinion, the financial statements audited by us present fairly, in all material respects, the financial position of The Transit System as of December 31, 1992, and the results of its operations and its cash flows for the year ...*

This phrase is stating that in the auditor's opinion, the financial statements "present fairly" - not that they are 100% accurate, only that they present fairly. This means that the conclusions that a reasonable person would draw from the financial statements would not be materially incorrect. The auditor's judgement is crucial in this process. In order to conclude that the financial statements are 100% accurate, the auditor would have to examine every transaction that occurred during the year. The cost of such an examination would be prohibitive.

*...in conformity with generally accepted accounting principles.*

With this phrase, the auditor is defining the principles of accounting which have been followed. The phrase "generally accepted accounting principles" (commonly referred to as GAAP) refers to volumes of pronouncements issued by the governing bodies of accounting. On issues where a pronouncement has been issued, the auditor is stating that the organization has followed the pronouncement. If the financial statements have been prepared using a different basis of accounting than GAAP, then a different opinion must be issued (which will be discussed shortly).

## **TYPES OF AUDIT OPINIONS**

### **An Unqualified Opinion**

The above opinion is an example of an unqualified opinion. Different formats exist in practice, but the essential phrases will always be included. An **unqualified opinion** means that the auditor believes that no changes need to be made to the financial statements in order for them to show a fair presentation. In certain circumstances, the auditor will add an explanatory paragraph to the unqualified opinion or issue a qualified opinion, an adverse opinion, or disclaim an opinion.

### **Explanatory Paragraph**

Certain circumstances, while not affecting the auditor's unqualified opinion, may require that the auditor add an **explanatory paragraph** to the standard report. The most common circumstances are (1) a change in accounting principle, (2) substantial doubt exists regarding the entity's ability to continue operating, and (3) there is a probable chance of a material loss, but the amount of the loss cannot be estimated. The explanatory paragraph highlights and explains the situation, but the opinion still states that the financial statements are presented fairly.

### **Qualified Opinions**

A **qualified opinion** is an opinion in which the independent auditor takes exception to some specific aspect of the financial statements as presented. Except for the effects of the specific matter to which the qualification relates, the financial statements are presented fairly.

One common reason for qualifying the opinion is that the financial statements are not prepared in accordance with Generally Accepted Accounting Principles (GAAP). Some organizations may find that financial statements prepared in accordance with a comprehensive basis of accounting other than GAAP, such as the cash basis, are adequate for their needs. In this case, the auditor will qualify the opinion and include a separate paragraph such as:

*As described in Note 1, the organization's policy is to prepare its financial statements on the basis of cash receipts and disbursements. Consequently, certain revenue and the related assets are recognized when received rather than when earned, and certain expenses are recognized when paid rather than when the obligation is incurred. Accordingly, the accompanying financial statements are not intended to present the financial position and results of operations in conformity with generally accepted accounting principles.*

### **Adverse Opinions**

The auditor will issue an **adverse opinion** when, in his or her opinion, the financial statements do not present fairly the financial position of the organization. This type of opinion is rarely issued and it, in effect, is telling the reader not to put any faith in the financial statements. A separate paragraph is included to state the reason for the adverse opinion and the effect, if it can be determined, on the amounts in the financial statements.

## **Disclaimers**

A **disclaimer** of opinion states that the auditor does not express an opinion on the financial statements. A disclaimer will be issued when the auditor is unable to form an opinion on the financial statements. This could result from limitations on the scope of the audit, inadequate accounting records, or material uncertainties (for example, a lawsuit for millions of dollars). When an auditor gives a disclaimer, the reason is stated in the opinion.



## **CONCLUSION**

An audit by an independent accountant is the major external financial management review for most small urban and rural transportation providers. The combination of accurate financial and performance reports, confirmed by independent audits, makes a transportation system highly manageable as well as accountable.

The following three sections of these guidelines present techniques to support the necessary management functions. These techniques are accounting, cost allocation, and typical costs.

# ***ACCOUNTING FUNDAMENTALS***

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This section describes basic techniques required to account for a transportation system's actions and results in both financial (monetary) and performance (activity-related) terms. Many persons using these guidelines may already be somewhat familiar with the concepts presented in these chapters. The financial accounting chapter reviews basic accounting procedures, including the double entry system, the accounting cycle, recording transactions, posting, adjusting, and financial statements. The performance evaluation chapter discusses the basics of performance measurement, including specific measures and their data sources.

- **Financial Accounting**
- **Performance Evaluation**



# ***Chapter 10: Financial Accounting***

Entire textbooks, high school and college courses, and college degrees are devoted to the topic of accounting. The section included here is only included as a brief review of the basics of accounting. If these topics are new to you or difficult for you, then you may need to acquire additional knowledge on the subject from classes, lectures, or textbooks specifically on accounting. This section summarizes the basics of accounting and the basic accounting cycle of 1) recording a transaction in a journal, 2) posting from a journal to a ledger, 3) preparing adjusting entries, and 4) preparing financial statements.

- Introduction
- The Accounting Equation
- The Double Entry System
- Basis of Accounting
- The Accounting Cycle in Summary
- Recording Transactions in a Journal
- Posting from the Journals to the Ledgers
- Adjusting Entries
- Financial Statements
- Conclusion



## INTRODUCTION

This chapter is a brief review of the fundamentals of accounting. The information in this chapter has been adapted from the Rural Transportation Accounting manual prepared by the Transportation Accounting Consortium in 1986. For further details or information, consult the Transportation Accounting Consortium manual, an accounting textbook, or take a bookkeeping or accounting course.

An accounting system is designed to record the financial transactions of an organization and summarize these transactions into various financial reports. The accounting cycle can be summarized as: transactions are recorded into journals, which are then posted to ledgers, from which the financial statements of the organization are prepared. The journals represent a chronological record of the business transactions of the organization. In order to provide useful information, the journal entries need to be classified and summarized. Transactions of a similar nature are grouped into a general ledger account. This process is called posting. Then general ledger accounts of a similar nature are summarized into financial statement line items. For example, all the cash accounts (a checking account, a savings account, etc.) are combined into the Cash line item in the financial statements.

A recommended Chart of Financial Accounts, developed by the Transportation Authority Consortium, is presented in Appendix A. This Chart of Accounts is meant to be truncated or expanded (but not materially altered) according to the needs of the local transportation system; in other words, this Chart of Accounts is meant to be flexible and adaptable. For example, special local categories of fares (Account Code Number 401) can be inserted between numbers 401.06 and 401.99. Similar flexibilities exist in the labor expense category (Account Code Number 501) and many others. The point is that this is a system that can be tailored to local needs without violating the overall structure of the Chart of Accounts.

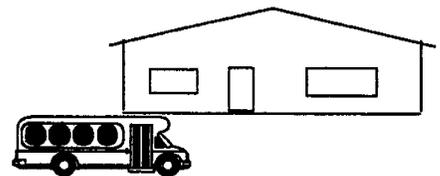
## THE ACCOUNTING EQUATION

The accounting equation which is the basis of all accounting practice is:

$$\text{Assets} = \text{Liabilities} + \text{Capital} .$$

### Assets

Assets are economic resources that can provide potential future benefits. Assets are divided into current assets, fixed assets and other long-term assets. Current assets represent resources which are expected to be consumed or converted to cash within one year. Fixed assets represent property, plant (buildings) and equipment which are used in the production of a good or the performance of a service. For transportation providers, any vehicles which are owned would be classified as fixed assets. Other long-term assets represent any other asset which does not fit into the current asset or fixed asset categories.



## Liabilities

Liabilities are obligations of the organization which will result in the probable future outlay of an asset. If you owe a gas station money on a credit card, then this is a liability. If you borrow money from a bank, then this is also a liability. Liabilities are divided into current liabilities, long-term debt, and other long-term liabilities. Current liabilities represent obligations which will become due within one year. Long-term debt is money that has been borrowed which will need to be repaid after one year. Other long-term liabilities represent any other liability which does not fit into the current liability or long-term debt categories.

## Capital

Capital accounts represent the ownership accounts of the organization. If the organization is a partnership and each partner contributed a certain amount of money, then these cash contributions would be included in the capital accounts. Also included in the capital section is the accumulated earnings or losses of the organization since its inception, along with the current year's revenue and expense accounts.

## THE DOUBLE ENTRY SYSTEM

Financial transactions are recorded in the accounting records using a double entry system in which each transaction affects at least two accounts. At least one account is debited and at least one other account is credited in every transaction.

A debit is used to record:

<u>Increases In:</u>	<u>Decreases In:</u>	-	+
Asset accounts	Liability accounts		
Expense accounts	Capital accounts		
	Revenue accounts		

A credit is used to record:

<u>Increases In:</u>	<u>Decreases In:</u>	+	-
Liability accounts	Asset accounts		
Capital accounts	Expense accounts		
Revenue accounts			

Regardless of the number of accounts involved in any transaction, the total dollar amount of the debits must always equal the total dollar amount of the credits. Normally asset and expense accounts will have debit balances and liability, capital and revenue accounts will have credit balances.

## BASIS OF ACCOUNTING

Transactions can be recorded on either a cash basis or an accrual basis. Under the cash basis, revenues and expenses are not recorded until cash is received or paid out. Under the accrual basis, revenues and expenses are recorded when earned or incurred. Several examples will make this distinction more clear.

Assume that your organization picks up a number of elderly people and transports them to a senior citizens center. You are paid \$2 on the fifth of each month for every passenger that you provided service to during the previous month. During the month of December, your organization transported 600 people under this program and you received a check for \$1,200 on January 5th. Under the cash basis, you would record the \$1,200 of revenue in January when the cash was actually received. Under the accrual basis, the \$1,200 of revenue would be recorded in December when it was earned by providing the transportation service.

As a second example, assume that your drivers charge all of their gasoline purchases on the system's credit card. On January 18th, you receive your credit card bill for \$91.67 with the following charges on it:

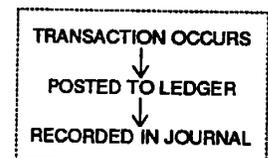
Dec 19 - \$19.00  
Dec 26 - \$24.50  
Dec 31 - \$18.50  
Jan 10 - \$15.00  
Jan 13 - \$14.67.

On February 3rd, you pay the entire bill of \$91.67. Under the cash basis, the entire bill of \$91.67 would be recorded as an expense in February when it was paid. Under the accrual basis, \$62.00 of the bill would be recorded as an expense in December (the \$19.00, \$24.50 and \$18.50 charges were incurred in December) and \$29.67 of the bill would be recorded as an expense in January (the \$15.00 and \$14.67 charges were incurred in January).

The advantage of the cash basis is that it is easier. However, the accrual basis is the only acceptable basis for most reports. Therefore, all entities should use the accrual basis.

## **THE ACCOUNTING CYCLE IN SUMMARY**

The accounting cycle was described briefly in the introduction to the accounting section. The cycle begins when a transaction occurs. The transaction is then recorded in one of the journals. At month-end (or more often), the journals are posted to the ledgers and the amounts from the ledgers are used to prepare the financial statements. If you are using a computerized accounting package, then the computer will perform the posting and summarizing that is necessary to go from the transactions that are input to the financial statements.



## **RECORDING A TRANSACTION IN A JOURNAL**

Once an event occurs which needs to be recorded, a source document should be either obtained or generated. A source document is a permanent record of the transaction showing all relevant details and can come from outside the organization (e.g. a vendor invoice) or from within the organization (e.g. time sheets). If a problem with the transaction develops, the source document will be your record of the

transaction. Therefore, care should be taken that source documents are well-prepared, complete, accurate, and filed in a safe place.

The next step is to use the source document to record the transaction in a journal. A number of different journals can be prepared and used to facilitate this process. Typical journals are the general journal, the cash receipts journal, the cash disbursements journal and the payroll journal.

Any transaction can be recorded in a general ledger. Below is an example of a cash receipt being recorded in a general ledger.

#### GENERAL LEDGER

Date	Account Title and Explanation	PR	Debit	Credit
Jan 31	Cash		5,000	
	Revenue from Day Care Program (to record cash received for transporting children to day care)			5,000

A cash receipts journal is a specialized journal that is only used to record receipts of cash. Below is an example of the same transaction being recorded in a cash receipts journal.

#### CASH RECEIPTS JOURNAL

Date	Explanation	Debit	Credit		
		Cash	Fare Revenue	Senior Citizen Revenue	Day Care Revenue
Jan 31		5,000			5,000

A cash disbursements journal is a specialized journal that is used to record only disbursements of cash. Below is an example of a transaction being recorded in a cash disbursements journal.

#### CASH DISBURSEMENTS JOURNAL

Date	Explanation	Debit			Credit
		Labor Expense	Fuel & Oil Expense	Vehicle Maint. Expense	Cash
Feb 17		3,267			3,267
Feb 18			639		639

**POSTING FROM THE JOURNALS TO THE LEDGERS**

Please consult a beginning accounting or bookkeeping textbook (or even the Transportation Accounting Consortium manual referred to above) for additional examples of these journals and how to record a transaction in a journal.

One ledger card needs to be prepared for each general ledger account. The ledger card will show the account description, account number, transaction date, explanation, debit and credit amount for the transaction, and a running balance. At the end of each month, or more often, the transactions recorded in the journals need to be posted to the ledgers. This means that the date of the transaction, debit or credit amount and page number of the journal are recorded in the ledger for the account number being affected. Depending on the journal being used, each individual transaction may not need to be recorded in the ledger. For example, in the cash receipts journal, there will be a separate column in which to record all the debits to cash. This column can be totalled and only the total will be recorded in the ledger.

An example of a ledger card for the cash account follows. Note that the entries shown in the journal earlier have been posted to the ledger card.

**CASH LEDGER CARD**

Date	Posting Source	Transaction		Ending Balance	
		Debit	Credit	Debit	Credit
Jan 1	Beginning Balance			3,162	
Jan 31	Cash Receipts Journal	5,000		8,162	
Feb 17	Cash Disb. Journal		3,267	4,895	
Feb 18	Cash Disb. Journal		639	4,256	

Again, consult a beginning accounting or bookkeeping textbook (or even the Transportation Accounting Consortium manual referred to above) for additional information and examples of the posting process.

**ADJUSTING ENTRIES**

If the accrual basis of accounting is being used, then adjusting entries need to be prepared. The adjusting entries are recorded in the general journal and are then posted to the ledger. The adjustments would be for items such as:

- Expenses incurred, but not yet paid.
- Expenses paid, but not yet incurred.
- Depreciation expense.
- Revenue earned, but not yet received.
- Revenue received, but not yet earned.

An expense that has been incurred (i.e. the organization has received the benefit from the item), but has not yet been paid, needs to be accrued. An example would be gasoline charges put on a credit card. If \$55 of gasoline was charged in March and the bill paid in April, the \$55 should be accrued for in March. The entry would be to debit gasoline expense and credit accounts payable (a current liability account).

### ***Expenses Paid, But Not Yet Incurred***

Sometimes, a payment will be made for which the transportation organization has not yet received the service. In this case, an asset is recorded for the unused portion of the payment. An example would be an insurance payment. Assume that on February 1st, \$3,000 is paid for a six-month insurance policy. At the end of February, only one-sixth of the policy has been used, so only \$500 of the payment should have been expended. When the \$3,000 payment was made on February 1, the entry would be to debit prepaid insurance (a current asset account) and credit cash for \$3,000. At the end of February, an adjusting entry would be made to debit insurance expense and credit prepaid insurance for \$500 (one-sixth of \$3000). The remaining prepaid insurance balance at the end of February would be \$2,500.

### ***Depreciation Expense***

Depreciation represents the process of allocating the cost of a fixed asset over its estimated useful life. Depreciation attempts to match the cost of the asset to the revenues that are generated by using the asset. Generally accepted accounting principles require that both for-profit and not-for-profit organizations record depreciation. To record depreciation, an adjusting entry is made at the end of each month to debit depreciation expense and to credit accumulated depreciation (an account that reduces the fixed assets balance). The most common methods of depreciation are straight-line units of service, double declining balance and sum-of-the-years digits. We will illustrate the straight-line and units of service methods here. Any basic accounting or bookkeeping book will have illustrations of the other methods if you need to use them.

### ***Straight-Line Method***

Assume that a small bus costing \$70,000 is purchased in May of 1990. The bus is expected to last for seven years. The entry to record the purchase would be to debit a fixed asset account and credit cash for \$70,000. The annual depreciation amount would be \$10,000 per year (calculated as \$70,000 cost divided by seven year estimated useful life) and monthly depreciation would be \$1,428.57. In the year the asset is acquired, only one-half of one year's depreciation can be taken. The fixed asset cost, accumulated depreciation, net book value (cost minus accumulated depreciation) and current year's depreciation at the end of each year would be as shown in Table 10-1.

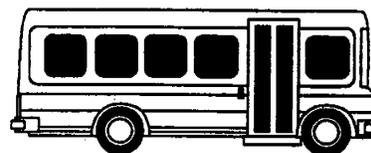


Table 10-1

STRAIGHT-LINE DEPRECIATION: SMALL BUS EXAMPLE

End of Year	Cost	Accumulated Depreciation	Net Book Value	Current Year's Depreciation
Purchase	\$70,000	\$0	\$70,000	-
1990	70,000	5,000	65,000	\$5,000
1991	70,000	15,000	55,000	10,000
1992	70,000	25,000	45,000	10,000
1993	70,000	35,000	35,000	10,000
1994	70,000	45,000	25,000	10,000
1995	70,000	55,000	15,000	10,000
1996	70,000	65,000	5,000	10,000
1997	70,000	70,000	0	5,000

Please note, however, that even though you depreciate the entire cost for accounting purposes, you can usually only report for reimbursement purposes depreciation on the portion of the cost that the transportation provider actually paid for.

**Units of Output Method**

The units of output method allocates the cost of the vehicles based on the number of units of output in the period. For transportation vehicles, the most common unit of output would be vehicle miles or vehicle hours. For illustrative purposes, we will use vehicle miles as our unit of output. A depreciation rate is determined by dividing the cost of the vehicle by the estimated number of miles the van is expected to travel before it has to be replaced. The depreciation for a month is then calculated by multiplying this depreciation rate by the actual number of miles the bus traveled during the month. Assume the following for an example:

Original cost of vehicle	\$70,000
Total estimated number of miles to be traveled during the bus's life	100,000 miles
Miles traveled during the current month	2,500 miles.

Using this information, we would first calculate the depreciation rate as the cost divided by the estimated miles:

$$\frac{\$70,000}{100,000 \text{ miles}} = \$0.70 \text{ per mile.}$$

The depreciation for the current month would then be calculated as the depreciation rate times the number of miles actually traveled:

$$\$0.70 \text{ per mile} \times 2,500 \text{ miles} = \$1,750.$$

The depreciation expense for the current month for this bus would be \$1,750. This method is only suitable when the total miles to be traveled over the entire life of the vehicle can be estimated with reasonable accuracy.

***Revenue Earned, But Not Yet Received***

Many of the entities which the transportation operator will provide service to will pay the operator after the transportation service has been provided. For example, assume that your system picks up a number of elderly clients and transports them to a senior citizens center as part of a project funded by the local government. You are paid \$2 on the fifth of each month for every passenger that you provided service to during the previous month. During the month of December, your system transported 600 clients under this program and you received a check for \$1,200 on January 5th. An adjusting entry would be made at the end of December to record \$1,200 of revenue and record an accounts receivable from the local government.

***Revenue Received, But Not Yet Earned***

In rare circumstances, the transportation operator may receive funding prior to the actual service being performed. Assume the same facts as in the above example except that the local government has agreed to pay you on the 25th of each month for the estimated number of passengers that will be transported during the following month. If you expect to transport 500 passengers during June, you would receive a check for \$1,000 on May 25. Since revenue should be recorded in the month that the service is provided under the accrual basis of accounting, the \$1,000 of revenue from this contract should be recorded in June when the transportation is provided rather than in May when the cash is received. As a result, a deferred revenue account (a current liability) should be credited and cash debited in May when the cash is received. In June, the deferred revenue account is debited and revenue is credited.



## **FINANCIAL STATEMENTS**

Four financial statements need to be prepared at the end of every fiscal year, and should be prepared at the end of each month. The four financial statements are:

- Balance Sheet.
- Income Statement.
- Statement of Changes in Retained Earnings.
- Cash Flow Statement.

In practice, retained earnings is also referred to as accumulated earnings or, if the balance is negative, accumulated deficit. Often, the income statement and statement of changes in retained earnings will be combined into one statement. Each of these statements will be discussed briefly and examples of each of these statements are in Tables 10-2, 10-3, and 10-4 (the second example combines the income statement and statement of changes in retained earnings).

### ***The Balance Sheet***

The balance sheet shows the financial status of the organization at a particular point of time. All the assets, liabilities, and capital accounts of the organization are included in the balance sheet, although certain general ledger accounts will be combined into one balance sheet line item. For example, both the checking and savings accounts would be included in the "Cash" line item on the balance sheet. The balance sheet is divided into two broad categories. The first category is "Assets" and the second is "Liabilities and Capital". Remember the equation  $\text{Assets} = \text{Liabilities} + \text{Capital}$ . This means that the total of the Assets section of the balance sheet must equal the total of the Liabilities and Capital section of the balance sheet. The Assets section is then further divided into "Current Assets", "Fixed Assets" and "Other Assets". The Liabilities and Capital section is further divided into "Current Liabilities", "Long-Term Debt", "Other Liabilities" and "Capital". The Accumulated Earnings amount in the Capital section is calculated in the Statement of Changes in Retained Earnings.



Table 10-2

**GORDON COUNTY COORDINATED TRANSPORTATION SYSTEM  
BALANCE SHEETS**

<u>ASSETS</u>	<u>December 31,</u>	
	<u>1991</u>	<u>1990</u>
<u>CURRENT ASSETS:</u>		
Cash	\$ 1,202	\$ 891
Accounts receivables	530	575
Prepaid expenses	<u>712</u>	<u>659</u>
	<u>\$ 2,444</u>	<u>\$ 2,125</u>
<u>FIXED ASSETS:</u>		
Transportation vehicles	\$145,721	\$145,721
Office equipment	2,078	2,197
Repair equipment	<u>8,954</u>	<u>6,733</u>
	\$156,753	\$154,651
<u>Less - Accumulated depreciation</u>	<u>29,111</u>	<u>17,624</u>
	<u>\$127,642</u>	<u>\$137,027</u>
<u>OTHER ASSETS:</u>		
Organization costs	<u>\$ 10,361</u>	<u>\$ 11,682</u>
<b>TOTAL ASSETS</b>	<b><u>\$140,447</u></b>	<b><u>\$150,834</u></b>
<u>LIABILITIES AND CAPITAL</u>		
<u>CURRENT LIABILITIES:</u>		
Current portion of long-term debt	\$ 4,187	\$ 4,009
Accounts payable	1,811	1,609
Accrued expenses	<u>925</u>	<u>1,107</u>
	<u>\$ 6,923</u>	<u>\$ 6,725</u>
<u>LONG-TERM DEBT:</u>		
Less current portion	<u>\$ 18,903</u>	<u>\$ 23,090</u>
<u>CAPITAL:</u>		
Local government investment	\$ 20,000	\$ 20,000
Federal government capital grant	70,000	70,000
Local government capital grant	20,000	20,000
Accumulated earnings	<u>4,621</u>	<u>11,019</u>
Total capital	<u>\$114,621</u>	<u>\$121,019</u>
<b>TOTAL LIABILITIES AND CAPITAL</b>	<b><u>\$140,447</u></b>	<b><u>\$150,834</u></b>



## The Income Statement

An income statement summarizes the financial results of the transportation system over a period of time. All the revenue sources are listed first, then all the expense items. Total revenue less total expenses equals the system's net income or loss for the time period.

## The Statement of Changes in Retained Earnings

The statement of changes in retained earnings shows exactly what the name implies -- the changes that occurred during the time period in the retained earnings account of the transportation system. The format used is:

- Beginning Retained Earnings
- + Net income for the period
- Net loss for the period
- Dividends declared
- = Ending Retained Earnings.

This statement is often included at the bottom of the income statement.

Table 10-3

### GORDON COUNTY COORDINATED TRANSPORTATION SYSTEM STATEMENTS OF INCOME AND RETAINED EARNINGS

	<u>December 31,</u>	
	<u>1991</u>	<u>1990</u>
<b><u>REVENUES:</u></b>		
Full adult fares	\$ 18,140	\$ 19,700
Senior center contract fares	16,700	17,210
Community college contract fares	24,910	25,700
State general operating assistance	<u>13,150</u>	<u>11,550</u>
	<u>\$ 72,900</u>	<u>\$ 74,160</u>
<b><u>EXPENSES:</u></b>		
Operator wages	\$ 23,412	\$ 22,808
Administrative wages	10,848	10,012
Fringe benefits	8,710	8,321
Professional services	6,099	5,850
Gasoline purchases	8,838	8,302
Utilities	5,074	4,212
Depreciation and amortization	13,229	11,012
Other operating costs	<u>3,088</u>	<u>2,970</u>
	<u>\$ 79,298</u>	<u>\$ 73,487</u>
NET INCOME (LOSS)	(\$6,398)	\$ 673
Accumulated earnings, beginning of year	<u>\$ 11,019</u>	<u>\$ 10,346</u>
Accumulated earnings, end of year	<u>\$ 4,621</u>	<u>\$ 11,019</u>

## The Cash Flow Statement

The cash flow statement shows the cash flow from operating activities, investing activities, and financing activities. This is the most complicated of the four financial statements. The other three statements can be prepared without the cash flow statement being prepared. However, the financial statements will not be in compliance with generally accepted accounting principles unless a statement of cash flow is prepared. If a cash flow statement is desired, a CPA may be needed to assist in the preparation.

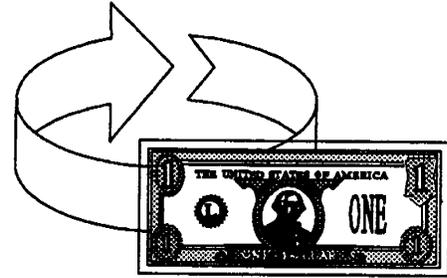


Table 10-4

### GORDON COUNTY COORDINATED TRANSPORTATION SYSTEM STATEMENTS OF CASH FLOWS

	<u>December 31,</u>	
	<u>1991</u>	<u>1990</u>
Cash flows from operating activities:		
Net income (loss)	\$ (6,398)	\$ 673
Adjustments to reconcile net income (loss) to net cash provided by operating activities -		
Depreciation	13,229	11,012
Change in assets and liabilities -		
Accounts receivable	45	(87)
Prepaid expenses	(53)	(12)
Accounts payable	202	62
Accrued expenses	<u>(182)</u>	<u>211</u>
Net cash provided by operating activities	<u>\$ 6,843</u>	<u>\$ 11,859</u>
Cash flows from investing activities:		
Capital expenditures	<u>\$ (2,523)</u>	<u>\$ (8,363)</u>
Cash flows from financing activities:		
Payments of long-term debt	<u>(4,009)</u>	<u>(3,981)</u>
Net increase (decrease) in cash	\$ 311	\$ (485)
Cash at beginning of period	<u>891</u>	<u>1,376</u>
Cash at end of period	<u>\$ 1,202</u>	<u>\$ 891</u>

## CONCLUSION

This chapter has outlined the basic fundamentals of accounting in a financial sense. The following chapter describes non-financial accounting considerations, those that deal with measuring the performance of a transportation system in terms of the amounts of services produced and consumed.

# ***Chapter 11: Performance Evaluation***

The nonfinancial results of the operations of transportation services are accounted for through performance measures such as cost effectiveness, cost efficiency, service effectiveness, and service quality. These measures are used to record the results of the services offered and to highlight potential areas for improvements.

- **Purposes of Performance Evaluation**
- **Performance Measures**
- **Data for Performance Measures**
- **Sources of Data for Evaluation**
- **Indicators Requiring Attention**
- **Conclusion**



## **PURPOSES OF PERFORMANCE EVALUATION**

Performance evaluation has purposes similar to those of financial accounting: (1) to record resource expenditures, (2) to record the intermediate results of transforming those resources into service, and (3) to record the results of delivering the service. Performance evaluation uses many forms of nonfinancial information as well as financial information. This information is used to measure and assess performance.

The genesis of assessing transit performance can be traced back to the mid-1970s when there was increasing concern by public officials for appropriate investment of scarce resources. Researchers developed measurement procedures which are now in common use by the transportation industry to manage performance.

## **Key Issues Addressed**

Performance measurement attempts to answer the questions:

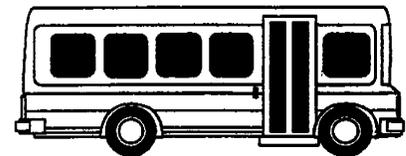
- Are resources being used most efficiently to deliver services? (doing things right)
- Are services being delivered in the most effective manner? (doing the right things)
- Are the resources being used most efficiently to deliver the most effective services? (doing the right things right)

More importantly, performance measurement is the means to evaluate the progress towards the attainment of transportation system

?

\$

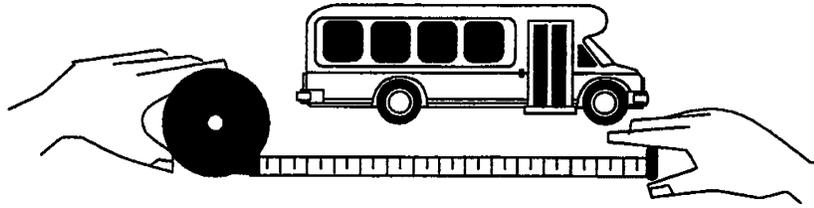
\$



goals and objectives (see Chapter 2, Goals and Objectives). Care must be exercised in the interpretation of performance measurements because of diverse factors which influence performance. These factors may be divided into two categories: controllable and noncontrollable. Controllable factors are those influenced by the decisions, policies, and actions of the transportation system's governing board, managers, and employees. Noncontrollable factors include elements which are not under the purview or influence of transportation systems, including the physical, economic, and social environment of the service area.

## **General Actions or Responses Resulting from Performance Assessment**

Performance measurement is important because it provides information that serves as a basis for management decision-making. It provides a means by which management may periodically assess performance, measure progress toward the achievement of goals and objectives, and consider actions which may change the course of future events. Such actions may result in the modification of policies, procedures, and processes. Other actions might lead to operational changes including service enhancement or service cessation.



When properly used, performance measurement can also serve as a diagnostic tool that identifies specific areas of problem performance. Data and statistics may be collected at the organizational, functional, work process, or job activity level to form performance measures that indicate satisfactory or unsatisfactory performance. It is important not only to assess the performance of the system and its internal functions, but also the external perceptions and expectations of passengers and the public. After all, the primary goal of any business is satisfied customers. Asking the public about transit is an appropriate way to measure performance.

Performance monitoring is one of the most significant tools available to the manager of a transportation system. Performance measures are the key to the question "What do I do now?", particularly when it appears that a problem is at hand. Indicators of performance can suggest corrective actions such as

- increases or decreases in
  - services
    - hours & schedules
    - vehicle miles
    - routes
  - revenues
    - fares
    - contracts
    - grants
  - staff
    - operations
    - administration
- changes or modifications in
  - procedures
    - administration
    - monitoring/reporting
    - hiring
    - training
    - maintenance
  - marketing/public relations.

In fact, all activities under the control of the system's managers can be more intelligently addressed with the proper information regarding performance measures.

## PERFORMANCE MEASURES

Performance measures normally take one of three forms: cost or resource efficiency, service effectiveness, and cost effectiveness. Cost effectiveness is the most important measure and is a function of both resource efficiency and service effectiveness. The three measures are defined as follows:

- **Cost Efficiency:** The amount of public transportation services produced for the community in relation to the resources expended. This measure attempts to answer the question, *How many resources were expended per unit of public transportation service?* Units of service produced are measured in terms of service outputs such as vehicle hours or vehicle miles. Resources expended include labor, capital, materials, and services. The smaller the amount of resources expended to produce a unit of service, the greater the resource efficiency of the public transportation service.

Primary cost efficiency measures include **total operating cost per vehicle service hour** and **total operating cost per vehicle service mile**. Total operating cost is defined as the cost of operating a transit system including all labor, materials, and services necessary for operations, maintenance, and administration but excluding capital cost. Vehicle service hours and miles are the hours and miles that transportation vehicles are in passenger service or available (with driver) for service.

Secondary cost efficiency measures are normally used to assess components of total operating cost when primary measures indicate problems or poor declining performance. Such measures include **Driver operating cost per vehicle service hour**, **Vehicle service hours as a percent of driver pay hours**, **Maintenance cost per vehicle mile**, and **Administrative cost per vehicle service hour**.

- **Service Effectiveness:** The consumption of public transportation service in relation to the amount of service available. This attempts to answer the question, *How much public transportation service was consumed (or revenue received), at an established price, in relation to the amount of service available?* The more service consumption (or passenger revenue) in relation to service output (vehicle miles and hours), the higher the level of service effectiveness.

Primary service effectiveness measures include **Passengers per vehicle service hour** and **Passengers per vehicle service mile**. Passengers are defined as the number of boarding passengers, revenue producing or not, carried by the transportation system.

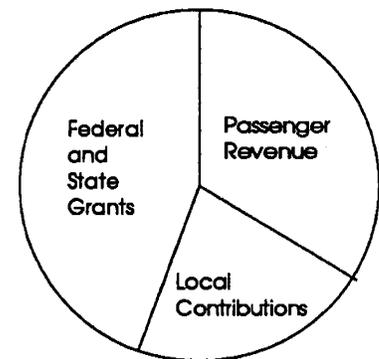
Other primary measures are **Passenger revenue per vehicle service hour** and **Passenger revenue per vehicle service mile**.



Passenger revenue is defined as the passenger fares and payments received from contract passenger services.

- **Cost Effectiveness:** The consumption of public transportation services in relation to the resources expended. This concept attempts to answer the question, *How many resources were expended per unit of consumption or how much consumption revenue was received per unit of resource expended?* Consumption is measured by passenger boardings, passenger trips or passenger miles. Consumption revenue is measured in terms of dollars. Resources expended to produce service are normally measured in terms of dollars. The smaller the dollars of resources expended in relation to the service consumed or the greater the consumption revenue received in relation to the dollars expended, the more cost-effective the service.

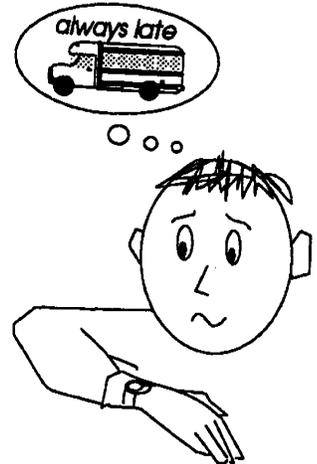
Primary cost effectiveness measures include **Passenger revenue plus local contributions as a percent of total operating cost, Passenger revenue as a percent of total operating cost, and Total operating cost per passenger.** Local contributions are defined as the sum of revenues provided by local government and any local private contributions to support the operations and services of the public transportation system.



- **Service Quality:** The relationship of service delivery and customer expectations. This concept attempts to answer the question, *Does the delivery of public transportation service meet or exceed customer expectations?* Service quality is defined as passengers, clients, and the public perceive it. Service quality has many dimensions and the importance of any single attribute differs among people. However, the attributes of quality include at least accessibility, availability, reliability, safety, and comfort. The following is a brief description of each.
  - **Accessibility** may be defined as the ability of the transportation service to readily accommodate disabled passengers on its buses and vans. A performance measure would be the percent of vehicle service hours with lift-equipped vehicles.
  - **Availability** may be defined by several factors including the span of service, frequency of service, and percent of population within walking distance (normally 1/4 mile) of fixed route service.

-- **Comfort** includes seat availability, climate control, and smooth ride operations. Seat availability is generally not an issue with small urban and rural systems but can be measured by counting standing passengers as a percent of total passenger boarding. Climate control comfort can be measured, for example, by the number of malfunctioning vehicle air conditioner days as a percent of total bus days when the temperature exceeds 85 F. Smooth ride performance is most appropriately judged by the number of passenger complaints about driver performance as a percent of total passenger boardings.

-- **Reliability** is a function of on-time performance. For a demand-responsive service, it is generally measured as the percent of time the service vehicle picks up a passenger within plus or minus minutes as scheduled (e.g., 5 minutes early to 15 minutes late). For fixed route systems, it is similarly measured as the percent of time the service vehicle arrives within plus or minus minutes according to the public schedule (e.g., zero minutes early to 5 minutes late).



-- **Safety** is a critical service quality attribute. It is often measured as the number of vehicle miles per accident or collision accident. More importantly, it should also be measured as the number of passenger injuries (or deaths) per 100,000 passenger boardings.

## **DATA FOR PERFORMANCE MEASURES**

Performance assessment requires data and statistics be formulated to result in meaningful performance measures. To ensure appropriate formulations, it is useful to categorize data and statistics as follows:

- **Resource inputs:** Resources expended in providing transportation service. They include labor, capital, materials, services, and other measurable items. Inputs may be classified either as financial or nonfinancial.
- **Service outputs:** Nonfinancial operating results of resource expenditures. They may be expressed as service quantity outputs such as miles or hours of service or service statistics such as accidents, road calls, or delays for use in assessing quality performance.
- **Public consumption statistics:** The actual results of service outputs considering the price or fare structure. Such information can be expressed in either financial or nonfinancial terms. For

example, the number of passenger boardings is nonfinancial; passenger revenue is financial.

To formulate resource efficiency performance measures, resource inputs are expressed in relation to service outputs (e.g., labor cost per service hour). To formulate service effectiveness performance measures, public consumption statistics are used with service outputs (e.g., passenger boardings per vehicle service mile). To formulate cost effectiveness performance measures, resource inputs are used with public consumption statistics (e.g., cost per passenger boarding).

**RESOURCE INPUTS**

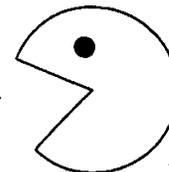


**SERVICE OUTPUTS**



miles/hours

**PUBLIC CONSUMPTION STATISTICS**



passengers

**SOURCES OF DATA FOR EVALUATION**

Data and statistics used for formulating performance measures may be found throughout the transit organization. Availability and quality of data and statistics is a function of management policies, procedures used in collecting and assimilating the information, and a structured reporting system. Management must establish policies which encourage and motivate employees to measure performance. A reporting system must be structured and in place to easily accept data and statistics collected from work processes. Poor data collection techniques will inevitably lead to unreliable statistics and, subsequently, misleading performance measures. A listing of important data and statistics and their most probable sources are as follows:

Data and Statistics

Probable Source

Dollars, labor hours

Accounting, payroll, financial management

Vehicle hours, vehicle service hours

Drivers, dispatchers, supervisors

Vehicle miles, vehicle service miles

Drivers, schedulers, dispatchers, maintenance shop

Passenger boardings, passenger trips

Drivers, schedule checkers, surveys

Accidents, passenger injuries

Drivers, supervisors, safety, training



**INDICATORS  
REQUIRING  
ATTENTION**

Complaints

Telephone information center,  
public relations, supervisors,  
managers

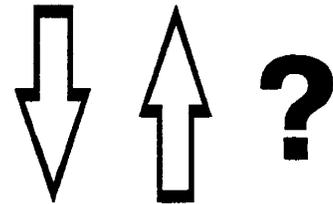
Sooner or later in a system's operation, the system manager, the Board of Directors, or other interested parties will want to apply qualitative judgements to the quantitative measurements. From the manager's point of view, the questions of "How do I know if I'm doing a good job?" and "How do I know if I'm in trouble?" are significant issues to be addressed.

There are three "most crucial" performance measures:

- cost per passenger,
- passengers per hour (or per mile), and
- cost per hour (or per mile).

Of these, the first is the most important because it describes how much service is actually being consumed in terms of the dollar value of the resources required to produce those services.

The best means for transportation operators to address their qualitative performance is to carefully track these three measures over time. If costs per passenger or per hour (or per mile) rise drastically and permanently, this is an indicator of real problems. If the passengers per hour (or per mile) indicator falls dramatically and permanently, this is an indicator of real problems. (Short-term seasonal cycles should not be a cause of major concern, as explained in Chapter 5.) After tracking these measures for several years, a transportation operation should be able to establish its own internal standards of performance.



A second means of assessing relative performance is to compare your system's performance with the performance of other systems. Such comparisons are fraught with difficulty, as your system's quantitative performance will be significantly influenced by your system's own goals and objectives, which may or may not be anything like another system's goals and objectives. Differences in terrain, weather, local economic conditions, and service policies can also significantly influence the relative performance of different systems. With these caveats in mind, it is possible to suggest some "typical" ranges of experience that are worth considering:

- **Cost effectiveness** answers the question **How much does it cost to carry one passenger?** The obvious measure is the performance indicator **operating cost per passenger**. The typical range of costs per passenger for small urban area fixed route

systems is from \$1.37 to \$2.93. The typical range of costs per passenger for rural area demand-responsive systems is from \$9.09 to \$14.18.

- **Service effectiveness** answers the question **How many passengers ride for every unit of service provided?** It is recommended that the performance indicator **passengers per hour** be used instead of passengers per service mile because the speed of service varies greatly with the type of service provided. The typical range of passengers per vehicle service hour for small urban area fixed route systems is from 5 to 12. The typical range of passengers per vehicle service hour for rural area demand-responsive system is from 2 to 6.
- **Cost efficiency** answers the question **How much does it cost to produce a unit of service?** It is suggested that the performance indicator **operating cost per hour** be used because the largest proportion of costs (i.e., wages and salaries) are paid on a hourly basis. The typical range of operating costs per vehicle service hour for small urban area fixed route systems is from \$28 to \$47. The typical range of operating costs per vehicle service hour for rural area demand-responsive systems is from \$24 to \$33.



Passengers  
per hour

Chapters 14 and 15 also contain detailed discussions of ranges of a large number of cost factors and performance measures.

Generally speaking, if your system's performance indicators fall within the ranges shown, as do the indicators for about two-thirds of the systems in this country, there are no large causes for concern (unless your performance this year is dramatically worse than last year, as discussed above). If your performance is outside these ranges, then you should spend some time and effort learning why this is so. There may be valid reasons for the variations (such as unusual goals or objectives), in which case you would continue your operations as before. On the other hand, you may not find appropriate reasons for the difference: in this case, you should strongly consider changing your operating policies and procedures to bring your system back within the range of "typical" operations.

## CONCLUSION

Performance measures are important to assess the attainment of transportation system goals and objectives. They also provide a means for management to periodically assess performance trends and consider actions which may lead to service modifications.

# ***COST ALLOCATION PROCEDURES***

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This section is designed to assist transportation providers in identifying and understanding their costs. Identifying and understanding costs will enable agencies to manage their operations more efficiently and to compare their operating costs with those of other operators providing the same service.

This section offers methods and information for determining costs. It focuses on the steps that are used in developing a universally-accepted cost allocation approach. The resultant cost allocation model is particularly useful for distributing total system costs among funding sources and to individual routes or services.

A step-by-step example using data is presented to demonstrate the application of the cost allocation methodologies. The hypothetical system operates 15 vehicles and provides almost 500,000 annual miles of service. This example is particularly geared to the requirements of demand-responsive and non-profit transportation providers.

■ **Cost Allocation Model Development**

■ **Cost Allocation Applications**



# **Chapter 12: Cost Allocation Model Development**

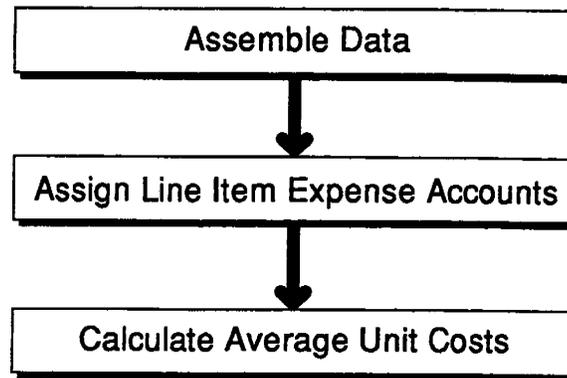
Rural and small urban transportation systems often must answer the question: How much does this service cost? The basic approach recommended and used by successful business operators is called full cost accounting. To use this approach, a consistent costing method (model) is needed.

A two-variable, fully allocated cost model is recommended. This model is a simple equation which uses hours and miles as the two service variables. It can be readily developed using data from the transportation system's most recent revenue and expense statement.

- **Step 1: Assemble Data**
- **Step 2: Assign Line Item Expense Accounts**
- **Step 3: Calculate Average Unit Costs**
- **Conclusion**



Developing a basic cost allocation model involves the following three steps:



### **STEP 1: ASSEMBLE DATA**

Most of the data that are used to calibrate the model can be obtained from the most recent revenue and expense statement. The Transportation Accounting Consortium (TAC) chart of accounts (see Appendix A) are used as the basis for developing the model for the hypothetical provider Burke Lake Transportation Service (BLTS) (See Table 12-1). In this example, the system's expenses totalled \$612,826 during the last calendar year.

The values for the resource variables (i.e., the numbers of hours and miles) are also obtained from the monthly statements. In this example, the BLTS operated **28,811 hours** and **473,512 miles** during the calendar year.

It should be noted that both the financial and operational data represent values for a full 12-month period. Since some expenses do not occur every month (e.g., insurance premiums), all costs may not be reflected on the ledger sheet if less than a 12-month period is used in the analysis.

While the majority of the operating data can be directly used in calibrating the model, data for some expense items must be modified or obtained from other sources. One common adjustment is to replace the general line item expense account **Other Salaries and Wages** with detailed accounts related to operations, administrative, and maintenance salaries and wages.

Another common adjustment is to replace general fringe benefit accounts with detailed fringe benefit accounts. Fringe benefit expenses are reported on the Accounting Consortium financial statement by fringe benefit class (e.g., FICA, unemployment insurance, worker's compensation). Each account represents the total fringe benefits paid to or for all employees. For example, the line item expense account **FICA or Railroad Retirement** includes the FICA tax paid for salaries paid to operators, dispatchers, administrative personnel, mechanics, and other employees.

Table 12-1  
**BURKE LAKE TRANSPORTATION SERVICE  
 CHART OF ACCOUNTS (1992)**

Expense Account	Expense
501.00 LABOR	
501.01 Operators' Salaries and Wages	\$179,760
501.02 Training Salaries and Wages	1,477
501.03 Dispatcher's Salaries and Wages	28,047
501.04 Administrative Salaries and Wages	67,986
501.99 Other Salaries and Wages	31,344
502.00 FRINGE BENEFITS	
502.01 FICA or Railroad Retirement	23,497
502.02 Hospital, Medical, and Surgical Plans	10,808
502.07 Unemployment Insurance	3,071
502.08 Worker's Compensation	1,364
502.09 Sick Leave	2,764
502.10 Holiday	6,144
502.11 Vacation	3,379
503.00 SERVICES	
503.03 Professional and Technical Services	2,115
503.05 Contract Maintenance Services	28,124
504.00 MATERIALS AND SUPPLIES CONSUMED	
504.01 Fuels and Lubricants	43,872
504.02 Tires and Tubes	5,103
504.03 Inventory Purchases	10,788
504.99 Other Materials and Supplies	9,825
505.00 UTILITIES	
505.02 Telephone	3,336
506.00 CASUALTY AND LIABILITY COSTS	
506.01 Premiums: Physical Damage Insurance	10,044
506.03 Premiums: Public Liability & Property Damage	34,734
507.00 TAXES	
507.04 Vehicle Licensing and Registration Fees	175
508.00 PURCHASED TRANSPORTATION SERVICE	67,380
509.00 MISCELLANEOUS EXPENSES	
509.01 Dues and Subscriptions	50
509.02 Travel and Meetings	871
512.00 LEASES AND RENTALS	
512.06 Operating Yards or Stations	2,376
512.12 Other General Administration Facilities	15,669
513.00 DEPRECIATION	
513.04 Dep: Passenger Revenue Vehicles	18,723
<b>TOTAL</b>	<b>\$612,826</b>

Calculating the most accurate cost allocation will require that some general accounts are replaced by detailed accounts. Separate records for other wages and salaries and fringe benefits are maintained by most transportation providers in their accounting systems. In this example, BLTS maintains the desired breakdown (See Table 12-2).



Table 12-2  
**DETAILED FRINGE BENEFIT CATEGORIES**  
**Burke Lake Transportation Service (1992)**

Expense Account		Expense
501.00	LABOR	
501.01	Operators' Salaries and Wages	\$179,760
501.02	Training Salaries and Wages: Operators	1,477
501.03	Dispatcher's Salaries and Wages	28,047
501.04	Administrative Salaries and Wages	67,986
501.99	Other Salaries and Wages: Mechanics	31,344
502.00	FRINGE BENEFITS	
502.01 .01	FICA or Railroad Retirement: Operators	13,752
502.01 .02	FICA or Railroad Retirement: Dispatchers	2,146
502.01 .03	FICA or Railroad Retirement: Administrative	5,201
502.01 .04	FICA or Railroad Retirement: Mechanics	2,308
502.02 .01	Hospital, Medical, and Surgical Plans: Op	4,880
502.02 .02	Hospital, Medical, and Surgical Plans: Disp	888
502.02 .03	Hospital, Medical, and Surgical Plans: Admin	2,964
502.02 .04	Hospital, Medical, and Surgical Plans: Mech	1,876
502.07 .01	Unemployment Insurance: Operators	1,798
502.07 .02	Unemployment Insurance: Dispatchers	280
502.07 .03	Unemployment Insurance: Administrative	680
502.07 .04	Unemployment Insurance: Mechanics	313
502.08 .01	Worker's Compensation: Operators	799
502.08 .02	Worker's Compensation: Dispatchers	125
502.08 .03	Worker's Compensation: Administrative	302
502.08 .04	Worker's Compensation: Mechanics	139
502.09 .01	Sick Leave: Operators	1,618
502.09 .02	Sick Leave: Dispatchers	252
502.09 .03	Sick Leave: Administrative	612
502.09 .04	Sick Leave: Mechanics	282
502.10 .01	Holiday: Operators	3,596
502.10 .02	Holiday: Dispatchers	561
502.10 .03	Holiday: Administrative	1,360
502.10 .04	Holiday: Mechanics	627
502.11 .01	Vacation: Operators	1,977
502.11 .02	Vacation: Dispatchers	309
502.11 .03	Vacation: Administrative	748
502.11 .04	Vacation: Mechanics	345
503.00	SERVICES	
503.03	Professional and Technical Services	2,115
503.05	Contract Maintenance Services	28,124
504.00	MATERIALS AND SUPPLIES CONSUMED	
504.01	Fuels and Lubricants	43,872
504.02	Tires and Tubes	5,103
504.03	Inventory Purchases	10,788
504.99	Other Materials and Supplies	9,825
505.00	UTILITIES	
505.02	Telephone	3,336
506.00	CASUALTY AND LIABILITY COSTS	
506.01	Premiums: Physical Damage Insurance	10,044
506.03	Premiums: Public Liability & Property Damage	34,734
507.00	TAXES	
507.04	Vehicle Licensing and Registration Fees	175
508.00	PURCHASED TRANSPORTATION SERVICE	67,380
509.00	MISCELLANEOUS EXPENSES	
509.01	Dues and Subscriptions	50
509.02	Travel and Meetings	871
512.00	LEASES AND RENTALS	
512.06	Operating Yards or Stations	2,376
512.12	Other General Administration Facilities	15,669
513.00	DEPRECIATION	
513.04	Dep: Passenger Revenue Vehicles	18,723
<b>TOTAL</b>		<b>\$612,827</b>

## **STEP 2: ASSIGN LINE ITEM EXPENSE ACCOUNTS**

The primary assumption of the two-variable, fully allocated cost model is that each line item expense either are variable costs that can be logically linked to either one of two resource variables --- hours or miles --- or are fixed costs. To accomplish this task, it is necessary to know how and why expense items vary.

For example, the **number of vehicle hours** is directly related to most of operator labor costs since driver expense is a function of the amount of time that vehicles are in operation. For this reason, line item expense accounts such as **Operators' Salaries and Wages** and **FICA or Railroad Retirement: Operators** were assigned to hours of operation (See Table 12-3).

Further, the **number of miles** accounts for most maintenance labor and materials costs as well as fuel expenses and vehicle depreciation. As a result, line item expense accounts such as **Other Salaries and Wages: Mechanics** and **Fuel and Lubricants**, and **DEPRECIATION: Passenger Revenue Vehicles** were assigned to miles of operation (See Table 12-3).

Finally, **fixed costs** are the expense items that do not vary with the number of miles or hours of operation but, instead, reflect the scale or size of the agency. Examples include administration and building rents. For this reason, line item expense accounts such as **Administrative Salaries and Wages** and **LEASES AND RENTALS: Operating Yards or Stations** were assigned to overhead (See Table 12-3).

There are no hard and steadfast rules for assigning expenses. For example, the line item expense account **Dispatcher's Salaries and Wages** could arguably be assigned to hours of operation since these expenditures reflect service activity. In this example, this line item account was assigned to fixed costs because it was assumed to be fixed and related to the overall scale of operations. In other words, BLTS would have to increase substantially in size before it hired another dispatcher.

In addition, the line item expense account **PURCHASED TRANSPORTATION SERVICES** could be pro-rated among the two resource variables since this expenditure reflects "back-up" transportation. In this example, this line item expense account was linked to hours because it was assumed to be most directly related to service activity.

Since there are no hard and steadfast rules for assigning expenses, good judgement and an understanding of how expenses are incurred are needed. A good expenses assignment should be:

- logical and understood by all,
- defensible and able to pass scrutiny from an outside observer, and
- consistent so that it is useful for watching cost trends over time.

**Table 12-3**  
**BURKE LAKE TRANSPORTATION CHART OF ACCOUNTS**  
**Basis for Expense Assignment**

Expense Account		Hours	Miles	Fixed Cost
501.00	LABOR			
501.01	Operators' Salaries and Wages	X		
501.02	Training Salaries and Wages: Operators	X		
501.03	Dispatcher's Salaries and Wages			X
501.04	Administrative Salaries and Wages			X
501.99	Other Salaries and Wages: Mechanics		X	
502.00	FRINGE BENEFITS			
502.01 .01	FICA or Railroad Retirement: Operators	X		
502.01 .02	FICA or Railroad Retirement: Dispatchers			X
502.01 .03	FICA or Railroad Retirement: Administrative			X
502.01 .04	FICA or Railroad Retirement: Mechanics		X	
502.02 .01	Hospital, Medical, and Surgical Plans: Op	X		
502.02 .02	Hospital, Medical, and Surgical Plans: Disp			X
502.02 .03	Hospital, Medical, and Surgical Plans: Admin			X
502.02 .04	Hospital, Medical, and Surgical Plans: Mech		X	
502.07 .01	Unemployment Insurance: Operators	X		
502.07 .02	Unemployment Insurance: Dispatchers			X
502.07 .03	Unemployment Insurance: Administrative			X
502.07 .04	Unemployment Insurance: Mechanics		X	
502.08 .01	Worker's Compensation: Operators	X		
502.08 .02	Worker's Compensation: Dispatchers			X
502.08 .03	Worker's Compensation: Administrative			X
502.08 .04	Worker's Compensation: Mechanics		X	
502.09 .01	Sick Leave: Operators	X		
502.09 .02	Sick Leave: Dispatchers			X
502.09 .03	Sick Leave: Administrative			X
502.09 .04	Sick Leave: Mechanics		X	
502.10 .01	Holiday: Operators	X		
502.10 .02	Holiday: Dispatchers			X
502.10 .03	Holiday: Administrative			X
502.10 .04	Holiday: Mechanics		X	
502.11 .01	Vacation: Operators	X		
502.11 .02	Vacation: Dispatchers			X
502.11 .03	Vacation: Administrative			X
502.11 .04	Vacation: Mechanics		X	
503.00	SERVICES			
503.03	Professional and Technical Services			X
503.05	Contract Maintenance Services		X	
504.00	MATERIALS AND SUPPLIES CONSUMED			
504.01	Fuels and Lubricants		X	
504.02	Tires and Tubes		X	
504.03	Inventory Purchases		X	
504.99	Other Materials and Supplies			X
505.00	UTILITIES			
505.02	Telephone			X
506.00	CASUALTY AND LIABILITY COSTS			
506.01	Premiums: Physical Damage Insurance		X	
506.03	Premiums: Public Liability & Property Damage		X	
507.00	TAXES			
507.04	Vehicle Licensing and Registration Fees			X
508.00	PURCHASED TRANSPORTATION SERVICE	X		
509.00	MISCELLANEOUS EXPENSES			
509.01	Dues and Subscriptions			X
509.02	Travel and Meetings			X
512.00	LEASES AND RENTALS			
512.06	Operating Yards or Stations			X
512.12	Other General Administration Facilities			X
513.00	DEPRECIATION			
513.04	Dep: Passenger Revenue Vehicles		X	

### **STEP 3: CALCULATE AVERAGE UNIT COSTS**

Other resource variables and methods can be used provided that they meet these objectives.

After the assignment of line item expense accounts to resource variables is completed, the "Xs" are replaced by the actual expense values. The amounts assigned to each resource variable are then totalled.

In the BLTS example, \$277,037 of expenses were assigned to hours of operation, \$188,812 of costs were logically linked to miles of operation and the remaining \$146,978 of expenses were considered fixed costs (See Table 12-4).

Average unit costs are calculated by:

- determining the value of each resource variable;
- dividing the resource cost by the resource value to obtain the average unit cost; and
- multiplying the hour and mile unit costs by the fixed cost factor.

In the BLTS example (see Table 12-5), the values of the resource variables are:

28,811	total annual vehicle hours
473,512	total annual vehicle miles
\$146,978	of assigned fixed costs.

The average unit costs are computed by dividing the total amount of expenses assigned to a given resource variable by the value of that resource variable. For example, the \$9.62 cost per vehicle hour was derived by dividing the cost of \$277,037 assigned to hours by 28,811 vehicle hours.

The fully allocated cost model is a relatively straightforward equation involving multiplication and addition. This model uses hours and miles as the two service variables and distributes the fixed costs over these variables.

$$\begin{aligned} \text{Annual Total Cost} &= \text{Fixed Cost Factor X} \\ & \quad [(\text{Cost per hour} \times \text{Annual hours of operation}) \\ & \quad + (\text{Cost per mile} \times \text{Annual miles of operation})] \end{aligned}$$

Applying this model involves calculating your cost per hour, cost per mile (including vehicle depreciation), and fixed cost factor and applying these costs to the annual hours or miles of operation.



Table 12-4  
EXPENSE ASSIGNMENT  
1992 Burke Lake Transportation Service Costs

Expense Account	Expense	
501.00	LABOR	
501.01	Operators' Salaries and Wages	\$179,760
501.02	Training Salaries and Wages: Operators	1,477
501.03	Dispatcher's Salaries and Wages	28,047
501.04	Administrative Salaries and Wages	67,986
501.99	Other Salaries and Wages: Mechanics	31,344
502.00	FRINGE BENEFITS	
502.01 .01	FICA or Railroad Retirement: Operators	13,752
502.01 .02	FICA or Railroad Retirement: Dispatchers	2,146
502.01 .03	FICA or Railroad Retirement: Administrative	5,201
502.01 .04	FICA or Railroad Retirement: Mechanics	2,398
502.02 .01	Hospital, Medical, and Surgical Plans: Op	4,880
502.02 .02	Hospital, Medical, and Surgical Plans: Disp	988
502.02 .03	Hospital, Medical, and Surgical Plans: Admin	2,964
502.02 .04	Hospital, Medical, and Surgical Plans: Mech	1,976
502.07 .01	Unemployment Insurance: Operators	1,798
502.07 .02	Unemployment Insurance: Dispatchers	280
502.07 .03	Unemployment Insurance: Administrative	680
502.07 .04	Unemployment Insurance: Mechanics	313
502.08 .01	Worker's Compensation: Operators	799
502.08 .02	Worker's Compensation: Dispatchers	125
502.08 .03	Worker's Compensation: Administrative	302
502.08 .04	Worker's Compensation: Mechanics	139
502.09 .01	Sick Leave: Operators	1,618
502.09 .02	Sick Leave: Dispatchers	252
502.09 .03	Sick Leave: Administrative	612
502.09 .04	Sick Leave: Mechanics	282
502.10 .01	Holiday: Operators	3,596
502.10 .02	Holiday: Dispatchers	561
502.10 .03	Holiday: Administrative	1,360
502.10 .04	Holiday: Mechanics	627
502.11 .01	Vacation: Operators	1,977
502.11 .02	Vacation: Dispatchers	309
502.11 .03	Vacation: Administrative	748
502.11 .04	Vacation: Mechanics	345
503.00	SERVICES	
503.03	Professional and Technical Services	2,115
503.05	Contract Maintenance Services	28,124
504.00	MATERIALS AND SUPPLIES CONSUMED	
504.01	Fuels and Lubricants	43,872
504.02	Tires and Tubes	5,103
504.03	Inventory Purchases	10,768
504.99	Other Materials and Supplies	9,825
505.00	UTILITIES	
505.02	Telephone	3,336
506.00	CASUALTY AND LIABILITY COSTS	
506.01	Premiums: Physical Damage Insurance	10,044
506.03	Premiums: Public Liability & Property Damage	34,734
507.00	TAXES	
507.04	Vehicle Licensing and Registration Fees	175
508.00	PURCHASED TRANSPORTATION SERVICE	67,360
509.00	MISCELLANEOUS EXPENSES	
509.01	Dues and Subscriptions	50
509.02	Travel and Meetings	871
512.00	LEASES AND RENTALS	
512.06	Operating Yards or Stations	2,376
512.12	Other General Administration Facilities	15,669
513.00	DEPRECIATION	
513.04	Dep: Passenger Revenue Vehicles	18,723
<b>TOTAL</b>		<b>\$612,827</b>

Table 12-5

**AVERAGE UNIT COSTS  
Burke Lake Transportation Service (1992)**

Basis of Assignment	Total Expenses Assigned (1)	Value of Resource Variable (2)	Average Unit Cost (1/2)
Hours	\$277,037	28,811	\$9.62
Miles	\$188,812	473,512	\$0.40
<b>Total</b>	<b>\$465,849</b>		
Fixed Cost	\$146,978	\$465,849	32%

In the BLTS example, the costs are:

\$9.62 per hour of service  
\$0.40 per mile of service

and the overhead factor is:

1.32.



(In the BLTS example in Table 12-4, the fixed costs are 32 percent of the total of the hourly costs and mileage costs; therefore, the fixed cost factor is 1.0 plus 0.32 or 1.32.)

The cost allocation equation can be converted to:

$$\text{Annual Total Cost} = 1.32 \times [(\$9.62 \times \text{Annual Hours of Operation}) + (\$0.40 \times \text{Annual Miles of Operation})]$$

$$\text{Annual Total Cost} = (\$12.70 \times \text{Annual Hours of Operation}) + (\$0.53 \times \text{Annual Miles of Operation})$$

To find the cost of operating one vehicle that travelled 33,000 annual miles in 2,400 hours of operation, the equation would be:

$$\begin{aligned} \text{Annual Total Cost} &= (\$12.70 \times 2,400) + (\$0.53 \times 33,000) \\ &= \$47,970. \end{aligned}$$

The cost of \$47,970 is a good estimate of the **existing costs** of this service. This issue is important because it deals with the distribution or allocation of total costs among funding services to the individual routes or services provided by a local jurisdiction or non-profit agency. Knowing the costs of individual routes or services is useful for management purposes and for billing client agencies.

In addition to current costs, transportation providers also are interested in **forecasting the cost impacts of service changes**. This requires the consideration of variable costs --- the costs that will change if the service change is implemented.

The cost allocation equation can be modified to estimate the costs of services changes by omitting the fixed cost factor. The equation is:

$$\begin{aligned} \text{Cost Change} &= (\text{Cost per hour} \times \text{Annual hours of operation}) \\ &+ (\text{Cost per mile} \times \text{Annual miles of operation}). \end{aligned}$$

For the Burke Lake Transportation Service example, the values in this equation would be:

$$\begin{aligned} \text{Cost Change} &= (\$9.62 \times \text{Annual Hours of Operation}) \\ &+ (\$0.40 \times \text{Annual Miles of Operation}). \end{aligned}$$

To find the cost of eliminating the service provided by one vehicle that travelled 33,000 annual miles in 2,400 hours of operation, the equation would be:

$$\begin{aligned} \text{Cost Change} &= (\$9.62 \times 2,400) + (\$0.40 \times 33,000) \\ &= \$36,288. \end{aligned}$$

The cost of \$36,288 is a good estimate of the **change in costs** if this service was eliminated. This approach also can be used to estimate the change in costs for service additions.

The two-variable cost allocation model is popular with transportation providers for the following reasons:

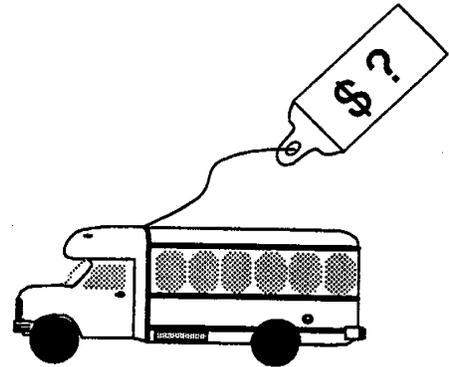
- The model is relatively simple. It focuses on two key service factors: vehicle hours and vehicle miles. Thus, it is easy to understand, develop and apply and is compatible with the operating environments common throughout the country. In most cases, such a model can be developed initially in only a few hours even by relatively non-technical personnel.



- The model is all-inclusive. The model takes into account all of the explicit costs contained in a typical revenue and expense statement. Moreover, the model can easily accommodate implicit costs as well.
- The model is extremely flexible and can be utilized to analyze various categories of total cost as needs dictate. Budgetary impacts can be readily ascertained by focusing on the variable costs of service. Likewise, an operating cost model can be developed by merely omitting depreciation expense from the analysis.

## **CONCLUSION**

The process of determining how much a service costs is one of assembling cost data, assigning the values to hourly, mileage, and fixed costs, and calculating average unit costs. These unit costs can then be used to determine costs of specific routes or services, to particular agencies, or to particular funding sources. Instructions for such calculations are in the following chapter.



# **Chapter 13: Cost Allocation Applications**

The two-variable cost allocation model is a powerful financial planning technique that can be applied in a variety of operating environments. The most common application is the allocation of costs of existing services.

This chapter presents three common cost allocation applications. They range in complexity from the simple case of billing a single agency for a single service to the complex case of billing multiple funding sources for services which carry several client groups.

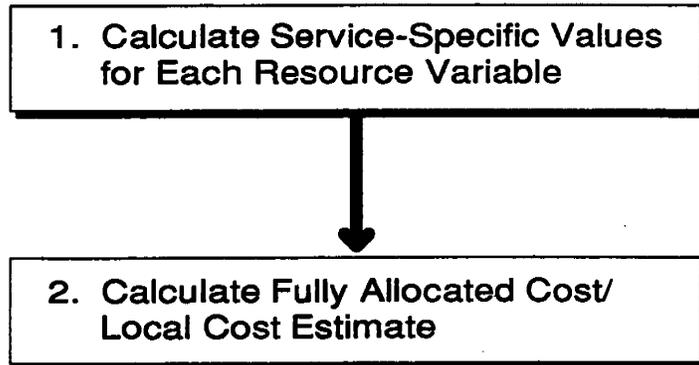
- **Example 1:  
Single Agency  
Billing**
- **Example 2:  
Multiple Agency  
Billing**
- **Example 3:  
Multiple Funding  
Sources**
- **Conclusion**



One reason for using a cost allocation model is to distribute costs among funding sources or to individual routes or services. Identifying the costs of individual operations is invaluable for reasons such as:

- **performance monitoring**, including the determination of key measures, such as the revenue-to-cost ratio and overall deficit for each service; and
- **cost reimbursement purposes** including determination of the fair share of costs attributable to different political entities or funding agencies for multi-jurisdictional or multi-purpose services.

Applying a fully allocated cost model to a given service is straightforward and consists of two steps:



Each of these steps is shown in the following three examples.

### **EXAMPLE 1: SINGLE AGENCY BILLING**

#### **Step 1: Record Values for Each Resource Variable**

The first step is to calculate the values of the resource variables for the service to be analyzed. These values should reflect the amount of service operated for the analysis period.

The Burke Lake Transportation Service operates several routes. One operation provides service to the medical center. The problem is to determine its operating costs. It provided the following level of service during last calendar year:

2,400	Total Annual Hours
33,000	Total Annual Miles.

Maintaining information on the operating characteristics of each individual service of a multi-service agency is fundamental to measuring performance. This information should be collected by management if it is not already part of the agency's on-going data gathering activities.

**Step 2: Calculate Fully Allocated Cost Estimate**

Each average unit cost factor is multiplied by the appropriate resource variable value in each case and then summed to obtain the cost estimate (Table 13-1).

Table 13-1

**BLTS SERVICES TO THE MEDICAL CENTER**

Resource Variable	Average Unit Cost	Value of Resource Variable	Total Cost
Hours	\$12.70	2,400	\$30,480
Miles	\$0.53	33,000	\$17,490
<b>Total</b>			<b>\$47,970</b>

In the BLTS medical center example, the service cost is estimated at \$47,970 during the last calendar year. This cost estimate could be used for billing and funding reimbursement purposes.

**EXAMPLE 2: MULTIPLE AGENCY BILLING**

**Step 1: Calculate Values for Each Resource Variable**

BLTS operates another service that serves both the Rehabilitation Institute and the Vocational Counseling Center. The problem is to determine the cost of service to each of these destinations. It provided the following level of service during last calendar year:

2,500 Total Annual Hours  
34,000 Total Annual Miles.

**Step 2: Calculate Fully Allocated Cost Estimate**

Each average unit cost factor (that is, cost per mile and cost per hour) is multiplied by the appropriate resource variable value (number of miles and number of hours) and then summed to determine the cost estimate.

In the BLTS multiple service case, the service cost is estimated at \$49,770 during the last calendar year (see Table 13-2). This cost estimate could be used for billing and funding reimbursement purposes.



Table 13-2

**BLTS COSTS FOR SERVICES TO REHABILITATION AND COUNSELING AGENCIES**

Resource Variable	Average Unit Cost	Value of Resource Variable	Total Cost
Hours	\$12.70	2,500	\$31,750
Miles	\$0.53	34,000	\$18,020
<b>Total</b>			<b>\$49,770</b>

The cost of providing service to multiple destinations, such as the Rehabilitation Institute and Vocational Counseling Center, is less obvious. Clearly, a "cost sharing" mechanism must be devised to equitably allocate the costs of service. While a number of factors could be considered, one fair and straightforward way is to distribute the costs to these two agencies on the basis of passengers served. In this example, passengers traveling to and from each center were tabulated during the last calendar year. Costs were then distributed in proportion to the ridership served to and from each facility (Table 13-3).

Table 13-3

**DISTRIBUTION OF BLTS SERVICE COSTS BY RIDERSHIP**

Agency	Ridership	Percent of Total Ridership	Distributed Cost
Rehabilitation Institute	4,000	43.5%	\$21,650
Vocational Counseling Center	5,200	56.5%	\$28,120
<b>Total</b>	<b>9,200</b>	<b>100.0%</b>	<b>\$49,770</b>

The total ridership on this service was 9,200. There were 4,000 passengers who traveled to the Rehabilitation Institute or 43.5 percent of the total ridership (4,000/9,200). The Vocational Counseling Center accounted for 5,200 passengers or 56.5 percent of the total ridership (5,200/9,200).

As a result, of the overall cost of \$49,770, the Rehabilitation Institute could be charged \$21,650 while the Vocational Counseling Center could be billed for the remaining \$28,120.

**EXAMPLE 3:  
MULTIPLE FUNDING  
SOURCES**

**Step 1: Record Values  
for Each Resource  
Variable**

Assume that BLTS only operates two services and that each is supported by several funding sources. The problem is to determine the cost of service that should be provided by each funding source. They provided the levels of service during last calendar year shown in Table 13-4.

Table 13-4

BLTS SERVICE LEVELS, LAST CALENDAR YEAR

Resource Variable	Service A	Service B	Total
Hours	2,400	29,360	31,760
Miles	33,000	440,512	473,512

**Step 2: Calculate  
Fully Allocated Cost  
Estimate**

As before, each average unit cost factor is multiplied by the appropriate resource variable value in each case and then summed to determine the cost estimate (Table 13-5).

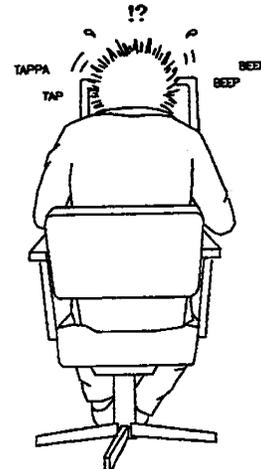


Table 13-5

## COSTS TO BLTS FOR EACH OF TWO SERVICES

Resource Variable	Average Unit Cost	Value of Resource Variable	Total Cost
<b>Service A</b>			
Hours	\$12.70	2,400	\$30,480
Miles	\$0.53	33,000	\$17,490
Total			\$47,970
<b>Service B</b>			
Hours	\$12.70	29,360	\$372,872
Miles	\$0.53	440,512	\$233,471
Total			\$606,343

Thus, the cost of providing Service A is estimated to be \$47,970 while the cost of providing Service B is calculated to be \$606,343.

The cost allocation model, in conjunction with ridership statistics, can also be used to provide an estimate of the support required from each funding source to sustain operations (Table 13-6).

Table 13-6

## DISTRIBUTION OF BLTS COSTS TO TWO FUNDING SOURCES FOR EACH OF TWO SERVICES

Funding Source	Ridership	Percent of Total Ridership	Total Cost	Distributed Cost	
				Source 1	Source 2
<b>Service A</b>					
1	8,400	75.7%		\$36,313	
2	2,700	24.3%			\$11,657
Total	11,100	100.0%	\$47,970		
<b>Service B</b>					
1	92,400	74.0%		\$448,694	
2	32,400	26.0%			\$157,649
Total	124,800	100.0%	\$606,343		
<b>Total Services</b>				\$485,007	\$169,306

In this example, passengers traveling on each service were counted during last calendar year by service and funding source. Costs were then distributed in proportion to the ridership served by funding source.

The total ridership on Service A was 11,100. Of that total, 8,400 or 75.7 percent (8,400/11,100) were assigned to Funding Source 1. The remaining 2,700 passengers, or 24.3 percent (2,700/11,100), were assigned to Funding Source 2.

As a result, Funding Source 1 should be charged \$36,313 of the overall cost of \$47,970 while Funding Source 2 should be assessed the remaining \$11,657.

The total ridership on Service B was 124,800. Of that total, 92,400 or 74.0 percent (92,400/124,800), were assigned to Funding Source 1 while the balance of 32,400, or 26.0 percent (32,400/124,800), were assigned to Funding Source 2.

Consequently, Funding Source 1 should be charged \$448,694 of the total cost of \$606,343 while Funding Source 2 should be assessed the remaining \$157,649.

In summary, Funding Source 1 should be billed \$485,007 while Funding Source 2 should be charged \$169,306.

## **CONCLUSION**

Using the cost allocation model allows the transportation provider to understand exactly what his or her costs are to each client agency and to each funding source. Bills can then be prepared that are directly related to costs, meaning that no one agency either subsidizes or is subsidized by another agency.

After deriving the costs and performance measures to be used in the allocation model, it is a good idea to check them against your system's previous measures or against other benchmarks. The following chapters provide some such benchmarks.



# **TYPICAL COSTS**

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This section presents information about the cost to provide transportation. Data in this section are intended to serve as "default" values in cases for agencies unable to calculate particular cost elements for their specific agency and to provide reference points for comparative purposes for agencies interested in comparing their costs to those of other agencies.

Comparisons can be made both to assess expenditures within cost elements and to evaluate an agency's production, performance, or efficiency. Section IV of this manual, **Monitoring and Analysis**, discusses such comparisons in depth. The data reflect FY92 costs, which can be corrected for inflation.

- **Typical Costs for Rural and Human Service Transportation Providers**
- **Typical Costs for Small Urban Public Transportation Systems**



# **Chapter 14: Typical Costs for Rural & Human Service Trans- portation Providers**

TYPICAL COSTS

**Typical Costs  
for Rural and  
Human  
Service  
Transportation  
Providers**

This chapter presents typical costs for rural and human service transportation providers. Cost ranges for operations, capital, and administrative costs, as well as unit costs, are provided.

- Typical Cost Categories
- Information Sources
- Operations Costs
- Capital Costs
- Administrative Costs
- Costs Per Unit of Transportation Service
- Conclusion



## **TYPICAL COST CATEGORIES**

The typical cost ranges presented in this chapter for human service transportation providers are organized as follows:

- Operations Costs
  - Fuel and Oil Costs
  - Maintenance and Repair Costs
  - Wages and Fringe Benefits
  - Insurance and Registration Costs
  - Vehicle Storage Costs
- Vehicle Capital Costs
  - Vehicle Capital Costs
  - Transportation Administrative Capital Costs
- Administrative Costs
  - Transportation Administrative Expense Rates
  - Administrative Labor Costs
  - Administrative Office Space Costs
  - Administrative Office Equipment Costs
  - Other Administrative Expenses
- Unit Costs
  - Cost of Unit Produced
  - Cost of Unit Consumed.

Throughout this section, costs for both rural and urban areas are given where the costs in one type of area differ from those in the other type of area. The differences in the cost data from the two types of areas are not easily explained; what is presented in this chapter are the results of a survey that did not analyze these differences. While plausible explanations for some of the urban/rural differences are offered, your best use of these benchmarks is to determine whether or not your system's costs are somewhat close to the stated figures ranges rather than worrying about your exact proximity to the averages shown here in this chapter. For further information on interpreting the significance of these figures or other "standards," see Chapter 11.



## **INFORMATION SOURCES**

Very few databases have been compiled of data which are useful in determining typical costs for rural and small urban transportation providers. Although many states require quarterly or monthly reports of their Section 18 and/or Section 16 recipients, and some have developed databases using these reports, the data reported are frequently incomplete, inaccurate, and inconsistent, and therefore

unreliable, unless the state DOT has the staff time or consultant resources to analyze the data collected and interpret it intelligently. It is recommended that you contact your state's department of transportation to see if they maintain a reliable database.

The most reliable database of typical costs for small transportation providers in the past ten years is Assessing the Cost of Services to the Elderly: A Manual for the Aging Network, prepared by the Institute for Economic and Social Measurements in 1984 for the Administration on Aging (AoA). The development of this manual ("the AoA manual"), included the identification of the fully allocated costs to provide transportation services to elderly persons by 49 agencies representing a variety of agency types in both rural and urban areas. 1982-1983 dollar costs were reported in the AoA manual; they have been corrected for inflation to reflect 1992 costs in this Chapter (except for fringe benefits ratios, which are expressed as 1983 figures since changes after 1983 in these ratios (if any) could not be expected to be directly related to inflation). The method used to correct for inflation was outlined in Chapter 4.

In the analysis of this database, it was determined that some localities could be distinguished as having significantly higher costs than the rest of their counterparts. This was true for approximately one-third of the rural areas and over one-quarter of the urban areas studied. Therefore, some of the tables that follow divide both rural and urban areas into "average cost areas" and "high costs areas" when appropriate, showing the average costs for all providers contacted in each type of area.

## **OPERATIONS COSTS**

Transportation operating costs include operating costs dependent on vehicle miles (fuel and oil and vehicle maintenance costs), operating costs dependent on vehicle hours of service availability (driver and dispatcher wages), and operating costs dependent on the number of vehicles (insurance, registration, and vehicle storage costs).

## Fuel and Oil Costs

Fuel and oil costs are expressed on a per-mile basis and vary considerably by vehicle type. This means that agencies which operate larger vehicles have greater fuel and oil costs per mile. Table 14-1 presents default values developed for average fuel and oil costs per mile by vehicle type.

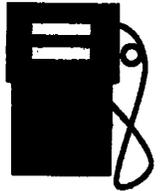


Table 14-1

### 1992 FUEL AND OIL COSTS

Vehicle Type	Approximate Miles per Gallon	Fuel and Oil Cost per Mile (1)
Sedan/Station Wagon	25	\$0.04
Van	15	\$0.07
Small Bus	6.5	\$0.17

(1) Assumes a 1992 price per regular unleaded gallon of gasoline at \$1.10.

## Vehicle Maintenance Costs

Vehicle maintenance costs include all contract and/or in-house maintenance of vehicles. As with fuel and oil costs, vehicle maintenance cost per mile are dependent on the type of vehicle. Vehicle maintenance costs per mile also vary by urban/rural location, with urban areas generally higher in cost than rural areas. Table 14-2 presents vehicle maintenance costs per mile by vehicle type and urban and rural areas. The bulk of the variation in urban/rural maintenance costs is probably due to salary differentials in these areas for mechanics. The higher maintenance costs for small buses in rural areas may be due to the inability to find service locally, or this may simply be an anomaly in the database used.

Table 14-2

### 1992 VEHICLE MAINTENANCE COST PER MILE

Vehicle Type	Rural	Urban
Sedan/Station Wagon	\$0.0579	\$0.1382
Van	\$0.0832	\$0.1386
Small Bus	\$0.1844	\$0.1457

## Driver Wage Costs

Driver wage costs are expressed as driver wage rate per hour plus fringe benefits. Driver wages vary by the urban/rural nature of the area and by whether drivers are full-time or part-time. Table 14-3 presents typical driver wages. In general, driver wages are higher in urban areas and wages for full-time employees are greater than wages for part-time employees. These differences are expected due to higher costs of living in urban areas and to higher wages paid to full-time employees.

Table 14-3

### 1992 OPERATING WAGE RATES PER HOUR

Labor Category	Rural		Urban	
	Average Cost Areas	High Cost Areas	Average Cost Areas	High Cost Areas
<b>Driver</b>				
Full-Time	\$5.68	\$7.66	\$6.02	\$9.90
Part-Time	\$5.43	\$6.92	\$6.11	\$8.30
<b>Dispatcher</b>				
Full-Time	\$6.66	\$7.44	\$7.84	\$12.86
Part-Time	\$5.14	\$7.29	\$6.03	\$7.81

## Dispatcher Wage Costs

Dispatcher wages are expressed as the dispatcher wage rate per hour plus fringe benefits. As with driver wages, dispatcher wages vary for urban and rural areas and by the full-time/part-time status of the employee (see Table 14-3). Dispatcher wages are generally higher than driver wages, which makes sense, since dispatchers are often drivers with more seniority, or persons who began as drivers and were promoted. Dispatcher wages are greater in urban areas, and full-time employees' wages are greater than part-time wages; both of these differences are as expected.



**Fringe Benefit Rates**

Fringe benefit rates for operators also vary for urban/rural locations and by the full-time/part-time status of the driver. Tables 14-4 and 14-5 present fringe benefit rates for operators broken into labor categories and urban/rural classification.

Table 14-4

**OPERATOR FRINGE BENEFIT RATES  
BY PERSONNEL CATEGORY (1983)**

Labor Category	Full-Time Percent of Salary	Part-Time Percent of Salary
Driver	28.1%	22.2%
Dispatcher	28.4%	22.0%
Other	22.9%	17.7%

Table 14-5

**OPERATOR FRINGE BENEFITS BY URBAN/RURAL  
CLASSIFICATION (1983)**

Transportation System Location	Average Cost Area Percent of Salary	High Cost Area Percent of Salary
Rural	26.5%	28.3%
Urban	23.7%	25.0%

## Vehicle Insurance Costs

Insurance costs are expressed on a per vehicle basis and vary by the type of vehicle and by urban/rural location. Table 14-6 indicates that, among the agencies contacted for this data file, in urban areas the per vehicle monthly insurance cost did not appear to vary by type of vehicle. In rural areas, monthly insurance costs per vehicle varied by vehicle type. Of course, rates will vary by amounts and types of coverage. The reasons for the urban/rural variations in insurance rates shown in this table are not clear. Since it is not certain that all operators in the sample used their vehicles for the same miles and hours, had similar insurance coverages, and had similar safety and driver standards, the differences shown may be due more to the specific providers interviewed rather than to underlying differences in rural versus urban transportation services.



Table 14-6

### 1992 MONTHLY INSURANCE COSTS PER VEHICLE

Vehicle Type	Rural	Urban
Sedan/Station Wagon	\$80.25	\$79.04
Van	\$97.04	\$79.01
Small Bus	\$113.84	\$77.52

## Vehicle License, Registration, and Storage Costs

The average cost of vehicle license and registration fees is \$3.07 per month per vehicle in rural areas and \$4.68 per month per vehicle in urban areas. This differential is probably due to higher costs of living in urban areas. Vehicle storage costs range from \$0 to \$50.66 per month per vehicle, with very few agencies having this expense. It appears that most agencies either park their vehicles in the agency parking lot or, in some cases, drivers take them home overnight. In the former case, vehicle storage space costs are included in building rent.

## CAPITAL COSTS

Capital costs associated with transportation include the costs of vehicles, office equipment associated with the actual operation of those vehicles, and dispatch equipment.

## Vehicle Capital Costs

Vehicle capital costs are estimated as the cost of replacing vehicles and are expressed as the cost of depreciation on the vehicle plus interest over the useful life of the vehicle (the length of time estimated that the vehicle would be operational). Capital recovery factors are used to convert one-time vehicle purchases to equivalent annual or monthly costs. Table 14-7 presents the monthly capital costs for various vehicle types as well as the assumed useful life and replacement costs, based upon a ten percent interest rate.

Table 14-7

1992 VEHICLE CAPITAL COSTS

Vehicle Type	Useful Life	Replacement Acquisition Cost	Monthly Capital Cost per Vehicle(1)
Sedan	5 yrs.	\$15,350	\$315.41
Station Wagon	5 yrs.	\$18,720	\$385.09
Van	5 yrs.	\$27,630 (2)	\$567.74
Small Bus	7 yrs.	\$61,400 (2)	\$982.69
Large Bus	12 yrs.	\$230,250 (2)	\$2,532.51

(1) Assumes 10 percent interest rate.

(2) Price includes the cost of a wheelchair lift and two tie-downs.

## Office Equipment for Transportation Operations

The cost of office equipment that is associated with the actual operation of the transportation service varies with the number of operating hours expended by an agency and the types and amounts of equipment.



## ADMINISTRATIVE COSTS

This section addresses only those administrative expenses directly attributed to transportation. It does not include the general administrative element of agencies (like a community action agency) which have multiple functions including transportation. (The distinction between general and service administrative rates is described in Chapter 4.)

## Transportation Administrative Expense Rate

The transportation administrative expense rate is computed as the ratio of transportation administrative costs divided by transportation operating costs. Table 14-8 presents a summary of transportation administrative expense rates. While they are not highly correlated with the urban/rural nature of an area, transportation administrative expense rates are slightly higher in urban areas. Transportation administrative expense rates also vary depending upon the type of agency operating the service. Transportation administrative expense rates are comparable for private non-profit and public agencies and for various management types. Agencies based in city or county governments and senior centers have higher transportation administrative expense rates than aging services or community action agencies. This may be because public services are typically operated through a full-fledged transportation department.

Table 14-8

### TRANSPORTATION ADMINISTRATIVE RATES (1983)

Agency Type	Administrative Expense Rates(1)
<b>Area Designation</b>	
<b>Rural</b>	
Average Cost Areas	25.4%
High Cost Areas	41.0%
<b>Urban</b>	
Average Cost Areas	43.5%
High Cost Areas	29.2%
<b>Organization Type</b>	
Private Non-Profit	35.6%
Public	31.3%
<b>Management Type</b>	
Single Purpose Agency	33.8%
Independent Unit with Central Planning Unit	30.0%
Part of Consolidated Multi-Purpose Agency	33.3%
<b>Agency Base</b>	
Aging Services	31.1%
Community Action Agency	28.3%
Government	45.2%
Senior Center	37.8%
<b>Average</b>	<b>35.1%</b>

(1) Figures are transportation administrative costs divided by all transportation operating costs (including administration).

## Administrative Labor Costs

Administrative labor within each personnel category are expressed in terms of hourly wage rates plus fringe benefits. Labor wage rates for administrative personnel vary considerably by urban versus rural areas. Table 14-9 presents wage rates for the seven personnel categories broken into wage rates for rural/urban and high cost/average cost areas. For similar positions, wage rates are typically higher in urban than in rural areas, as reflected in Table 14-9.



Table 14-9

### 1992 ADMINISTRATIVE WAGE RATES PER HOUR

Labor Category	Rural		Urban	
	Average Cost Areas	High Cost Areas	Average Cost Areas	High Cost Areas
Director	\$11.87	\$16.90	\$15.15	\$18.11
Assistant Director	\$8.69	\$11.47	\$11.48	\$16.78
Coordinator	\$7.38	\$7.81	\$9.81	\$15.18
Bookkeeper	\$7.57	\$9.01	\$8.98	\$10.91
Administrative Assistant	\$8.50	\$8.72	\$8.96	\$10.67
Clerical	\$6.31	\$6.48	\$8.77	\$9.01

Fringe benefit rates express fringe benefit costs as a function of wages. Rates are included below for each labor category and for part-time versus full-time employees. Fringe benefit rates do not vary between urban and rural areas. Table 14-10 presents fringe benefit rates for administrative personnel. Fringe benefit rates cover all fringe benefit categories including insurance (medical, dental, life, unemployment, and workman's compensation), pension, sick leave, holidays, vacation, and other paid absence. Because rates are expressed as a function of salary, often the higher the salary level, the lower the fringe benefit rate: even though higher salaried individuals might be getting more benefits than lower-salaried individuals, the benefits do not increase as fast as salaries. Part-time employees seldom receive the full benefits package; therefore, their benefit rates are lower.

Table 14-10

**1983 FRINGE BENEFIT RATES FOR  
ADMINISTRATIVE PERSONNEL**

Labor Category	Full-Time Percent of Salary	Part-Time Percent of Salary
Director	29.9%	—
Assistant Director	28.8%	15.8%
Coordinator	30.1%	19.5%
Bookkeeper	30.7%	20.2%
Administrative Assistant	26.8%	20.8%
Clerical	31.6%	25.7%
Other	26.1%	25.8%



## **Administrative Office Space Costs**

Administrative office space costs are expressed as the monthly rent per square foot for office space devoted to transportation administrative activities plus the rate of other space costs (such as utilities, parking, etc.) Monthly rent per square foot of office space varies for urban and rural areas, with rent in high cost urban areas over three times that in average cost rural areas. This is typical of many different cost of living indices which show higher costs in urban than rural areas. Table 14-11 presents the rent per square foot in different areas. Other costs associated with office space include utilities, custodial services, security services, refuse collection, property taxes, facility insurance, and maintenance on facilities. These costs vary as a function of the miscellaneous space costs per square foot of general or transportation administration space.

Table 14-11

### **1992 RENTAL COSTS FOR OFFICE SPACE PER SQUARE FOOT PER MONTH**

Area Designation	Per Square Foot per Month
<b>Rural Rent</b>	
Average Cost Areas	\$0.35
High Cost Areas	\$0.75
<b>Urban Rent</b>	
Average Cost Areas	\$0.66
High Cost Areas	\$1.15
<b>Miscellaneous Space Expenses (1)</b>	<b>\$0.25</b>

(1) Includes utilities, custodial services, security services, refuse collection, property taxes, facility insurance, and maintenance on facilities.

## Administrative Office Equipment

The cost of administrative office equipment includes the annualized cost of items such as desks, chairs, tables, computer equipment, etc. These one-time costs are converted to equivalent monthly costs. Table 14-12 presents monthly capital costs for the eight most common pieces of office equipment. Useful life is assumed to be five years and interest rates are assumed to be ten percent. No significant cost differences were found in urban and rural areas for these costs, as prices for such items are typically similar (or such items can be purchased by mail from national retailers).

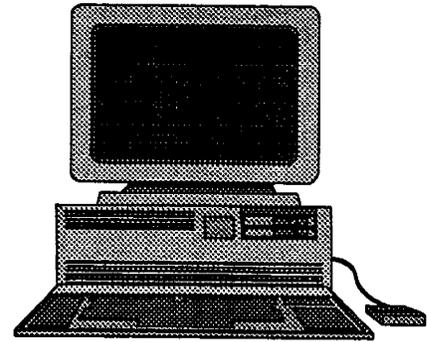


Table 14-12

### 1992 OFFICE EQUIPMENT CAPITAL COSTS

Item	Monthly Capital Cost per Item(1)
Desk	\$9.11
Chair	\$3.04
Table	\$6.07
File Cabinet	\$6.07
Bookshelf	\$3.04
TDD with answering machine	\$3.79
Answering Machine	\$2.20
Fax Machine	\$10.99
Personal Computer (386)	\$32.97
Dot Matrix Printer	\$6.59
Photocopy Machine	\$10.99

(1) Assumes 10 percent interest rate and useful life of 5 years.

**Other Administrative Costs**

Other general and transportation administrative costs include items such as telephone, supplies, postage, staff travel, printing, bonding, dues and subscriptions, etc. Other administrative costs are dependent upon the number of administrative labor hours. Table 14-13 presents other administrative costs. None of the other administrative costs per hour vary by urban/rural locations.

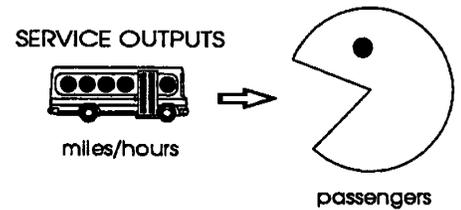
Table 14-13

**OTHER ADMINISTRATIVE COSTS (1992)**

Cost Category	Monthly Cost	Costs per Labor Hour
Telephone	\$110.97	\$0.892
Supplies	\$80.86	\$0.640
Postage	\$21.29	\$0.186
Other	\$202.24	\$1.292
<b>Total</b>	<b>\$415.36</b>	<b>\$3.010</b>

**COST PER UNIT OF TRANSPORTATION SERVICE**

This section first looks at the cost of producing a unit of transportation service (in terms of cost per mile or cost per hour) and then looks at the unit cost of service consumed (cost per trip).



**Unit Costs of  
Transportation  
Services Produced**

Unit costs for transportation services produced are expressed as cost per vehicle hour of service available. These unit costs, shown in Table 14-14, are presented in terms of urban/rural location and type of agency operating the service. The type of agency operating the service also affects the cost per hour, with public agencies having higher costs than private non-profit agencies and aging service organizations having slightly lower rates than other agencies. Rural costs per hour are lower than urban costs per hour primarily because of the lower wage rates in rural areas. Lower wage rates for non-profit organizations could also explain the cost differences in organization type and agency base.

Table 14-14

**1992 COSTS OF PRODUCING A UNIT  
OF TRANSPORTATION SERVICE**

Agency Type	Cost/Hour
<b>Area Designation</b>	
Rural	\$23.13
Urban	\$26.29
<b>Organization Type</b>	
Private Non-Profit	\$24.01
Public	\$26.42
<b>Management Type</b>	
Single Purpose Agency	\$25.20
Independent Unit with Central Planning Unit	\$26.29
Part of Consolidated Multi-Purpose Agency	\$23.98
<b>Agency Base</b>	
Aging Services	\$22.83
Community Action Agency	\$20.75
Government	\$26.29
Senior Center	\$26.66
Other	\$31.22
Average	\$24.58
Low	\$16.39
High	\$32.76



**Unit Costs of  
Transportation  
Services Consumed**

The most important measure of service costs is **cost per trip** since this measures what **one unit of service to a passenger actually costs** in terms of the number of persons who use the services. Table 14-15 displays these costs broken down by rural/urban classification and agency type. These figures generally reflect the observations noted for Table 14-14; costs are higher in urban areas, private non-profit operators are less expensive than public operators.

Table 14-15

**UNIT COSTS OF TRANSPORTATION CONSUMED (1992)**

Agency Type	Cost/Trip
<b>Area Designation</b>	
Rural	\$8.52
Urban	\$9.75
<b>Organization Type</b>	
Private Non-Profit	\$8.70
Public	\$10.36
<b>Management Type</b>	
Single Purpose Agency	\$9.89
Independent Unit with Central Planning Unit	\$7.94
Part of Consolidated Multi-Purpose Agency	\$9.04
<b>Agency Base</b>	
Aging Services	\$8.34
Community Action Agency	\$10.56
Government	\$9.66
Senior Center	\$7.43
Other	\$10.27
Average	\$9.09
Low	\$3.99
High	\$14.18

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## **CONCLUSION**

This chapter presented typical costs and cost ranges for rural and human service transportation providers, based upon a 1983 survey updated to reflect 1992 dollars. The typical costs were grouped as operations, administrative, and capital costs. Typical unit costs were also presented. You should remember that the figures presented here may not necessarily be indicative of "appropriate" costs in any given locality for reasons explained in this chapter and in Chapter 11.

# **Chapter 15: Typical Costs for Small Urban Public Trans- portation Providers**

*TYPICAL COSTS*

*Typical Costs  
for Small  
Urban Public  
Transportation  
Providers*

This chapter presents typical costs for small urban public transportation providers. Cost ranges for operations, vehicle maintenance, administrative costs, and capital, are provided, as well as unit costs,

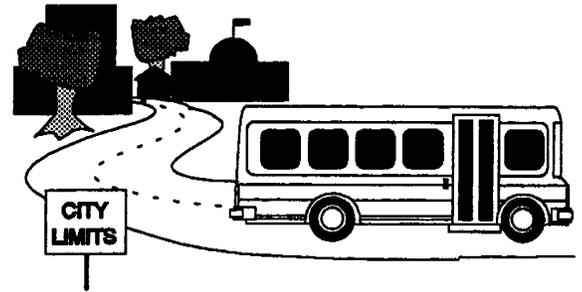
- **Typical Cost Categories**
- **Information Sources**
- **Operations Costs**
- **Vehicle Maintenance Costs**
- **Administrative Costs**
- **Capital Costs**
- **Unit Costs**
- **Conclusion**



## TYPICAL COST CATEGORIES

The typical cost ranges presented in this chapter for small urban public transportation systems are organized as follows:

- Operations Costs
- Vehicle Maintenance Costs
- Administrative Costs
- Capital Costs
- Unit Costs.



Non-vehicle maintenance costs, casualty and liability costs, and utility costs have all been included under administrative costs due to the inconsistency of reporting non-vehicle maintenance costs among the transit systems in the sample of transportation systems used to derive the cost ranges. All depreciation, lease, and rental costs of all categories of capital are included under capital costs because the data sources did not break them down among the other cost categories.

Each of the typical costs are presented as one of the following per-unit rates: per active vehicle, per vehicle hour of service, and per vehicle mile of service. The unit rate used for each cost category corresponds to the two-variable cost allocation model discussed in Chapters 12 and 13. All costs are presented in 1992 dollar values. To update these costs for future years, see Chapter 4, Special Considerations.

The typical costs are presented in two ways: 1) an average cost, and 2) a range of typical values. The average cost is the average among all of the transportation systems in the sample, and is not necessarily representative of all systems. The range of typical costs may be a more useful benchmark than the average cost for most transportation systems. If your system's costs fall outside of the ranges shown here, you should try to understand why your costs are different. It may be that there are special circumstances (for example, unusual geography) or special service goals that create unusually high or low costs for your system. On the other hand, unusually high or low costs may signal that you should consider altering certain practices. The range of typical costs is one standard deviation from the average, except where a zero value appears. (Zeros are used in instances where subtracting one standard deviation from the average would result in a negative value.) The range is provided to reflect the wide range of types of transit systems represented in the sample as well as the types of systems which will be using this manual. Although all of the systems in the sample are based in small urbanized areas, many of them operate service outside of the urbanized area as well. Some of them operate fixed route services using full sized buses, while others operate demand-responsive services using vans and smaller vehicles. Some operate 35 or more vehicles, while others operate fewer than ten vehicles. The "average" small urban transit system is as mythical as the "average American family." Your system's costs may be higher or lower than the average and still fall within the "normal" range.

## **INFORMATION SOURCES**

Very few databases have been compiled which are useful in determining typical costs for rural and small urban transportation providers. Although many states require quarterly or monthly reports of their Section 18 and/or Section 16 recipients, and some have developed databases using these reports, the data reported are frequently incomplete, inaccurate, and inconsistent, and therefore unreliable, unless the state DOT has the staff time or consultant resources to analyze the data collected and interpret it intelligently. It is recommended that you contact your state's department of transportation to see if they maintain a reliable database.

In the preparation of these financial management guidelines, a database of FY90 Section 15 financial and operating data for systems based in urbanized areas or places with 1990 populations of fewer than 100,000 persons was created by Ecosometrics, Incorporated. These data were obtained from 1991 Transit Operating and Financial Statistics: Transit System Statistics for Calendar/Fiscal Year 1990, produced by the American Public Transit Association, Washington, D.C., and Transit Profiles: Agencies in Urbanized Areas with a Population of Less than 200,000 for the 1990 Section 15 Report Year, prepared by the U.S. Department of Transportation, Federal Transit Administration, December 1991. The information used to derive rates for detailed cost categories (Tables 15-1 through 15-4) consisted of a sample of 24 transit systems which operate fixed route and/or demand responsive services and do not contract for operations of any services. Using data only on services which were operated in-house, and breaking down costs into the most specific costs categories possible, given apparent reporting inconsistencies among operators, typical costs for small urban transit operators were derived. The sample used to obtain unit costs for fixed route services (Table 15-5) consisted of 40 systems which reported allocated costs to fixed route services. The sample used to obtain unit costs for demand-responsive services (Table 15-6) consisted of 16 systems which reported costs allocated to demand-responsive services. It must be noted that a number of the systems included in the database also operated services in the rural areas outside of the urbanized area in which they are based. The FY90 Section 15 data were updated into FY92 dollars using the procedure for correcting for inflation described in Chapter 4.

## OPERATIONS COSTS

Table 15-1 presents the typical operations costs for public transit systems based in small urban areas. The operations costs include operators' (drivers') salaries and wages per hour, other operations salaries and wages (including dispatchers) per vehicle, professional services (including temporary operations staff) cost per vehicle hour, fuel and lubricants cost per mile, tires and tubes cost per mile, other materials cost per hour, and miscellaneous costs per hour. Total operations costs per vehicle, per mile, and per hour are also shown, as are the fringe benefits rate and the percent of the total system cost which is allocated to operations expenses.

Table 15-1

### TYPICAL 1992 OPERATIONS COSTS

Operating Cost Categories	Average Cost	Range of Typical Values
Operators' Salaries and Wages per Vehicle Hour	\$10.78	\$7.49 - \$14.07
Other Operations Salaries and Wages per Active Vehicle per Year	\$1,786	\$243 - \$3,330
Professional Services per Vehicle Hour	\$0.22	\$0.00 - \$0.70
Fuel and Lubricant Cost per Vehicle Mile	\$0.17	\$0.13 - \$0.22
Tire and Tube Cost per Vehicle Mile	\$0.03	\$0.02 - \$0.05
Other Materials Cost per Vehicle Hour	\$0.19	\$0.00 - \$0.45
Miscellaneous Cost per Vehicle Hour	\$0.29	\$0.00 - \$0.96
Total Operations Cost per Active Vehicle per Year	\$37,168	\$26,308 - \$48,029
Total Operations Cost per Vehicle Mile	\$1.35	\$1.01 - \$1.69
Total Operations Cost per Vehicle Hour	\$19.21	\$14.45 - \$23.98
Fringe Benefit Rate (% of salary costs)	32.15%	21.75% - 42.55%
Operations Percent of Total Cost	52.19%	45.46% - 58.92%

**VEHICLE  
MAINTENANCE  
COSTS**

Table 15-2 presents the typical vehicle maintenance costs for public transit systems based in small urban areas. The maintenance costs include the labor (mechanics') cost per mile (including salaries, wages, and fringe benefits), professional services cost per mile (including contracted maintenance services), and cost per mile for materials. Total maintenance costs per vehicle and mile are also shown, as are the fringe benefits rate and the percent of the total system cost which is allocated to maintenance expenses.



Table 15-2

**TYPICAL 1992 MAINTENANCE COSTS**

Maintenance Cost Categories	Average Cost	Range of Typical Values
Labor Cost per Mile(1)	\$0.25	\$0.13 - \$0.37
Professional Services Cost per Mile	\$0.04	\$0.00 - \$0.14
Materials Cost per Mile	\$0.18	\$0.05 - \$0.31
Total Maintenance Cost per Vehicle per Year	\$12,573	\$6,930 - \$18,217
Total Maintenance Cost per Mile	\$0.46	\$0.23 - \$0.69
Fringe Benefit Rate (% of salary costs)	37.66%	\$0.27 - \$0.48
Maintenance Percent of Total Cost	16.61%	11.49% - 21.73%

(1) Includes fringe benefits.

## ADMINISTRATIVE COSTS

Table 15-3 presents the typical administrative costs for public transit systems based in small urban areas. The administrative costs are all expressed in terms of annual cost per vehicle. The administrative costs include labor (including fringe benefits), professional services, casualty and liability (including all casualty and liability costs for the system), materials, utilities (including all utility costs for the system), taxes, interest, and miscellaneous costs. Included in the above cost categories are those costs associated with non-vehicle maintenance. Total administrative cost per vehicle is also shown, as are the fringe benefits rate and the percent of the total system cost which is allocated to administrative expenses.

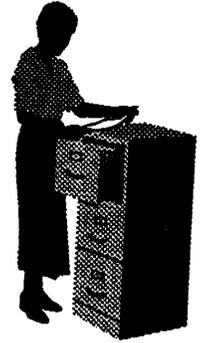


Table 15-3

### TYPICAL 1992 ADMINISTRATIVE COSTS

Administrative Cost Categories	Average Cost	Range of Typical Values
Labor Cost per Vehicle(1)	\$7,333	\$4,207 - \$10,460
Professional Services Cost per Vehicle	\$2,947	\$511 - \$5,382
Casualty and Liability Cost per Vehicle(2)	\$3,476	\$1,836 - \$5,315
Materials Cost per Vehicle	\$768	\$109 - \$1,428
Utilities Cost per Vehicle(3)	\$1,191	\$583 - \$1,800
Taxes per Vehicle	\$253	\$0 - \$1,036
Interest per Vehicle	\$108	\$0 - \$346
Miscellaneous Cost per Vehicle	\$2,285	\$0 - \$6,479
<b>Total Annual Administrative Cost per Vehicle</b>	<b>\$15,770</b>	<b>\$11,097 - \$20,443</b>
Fringe Benefit Rate (% of salary costs)	35.37%	21.91% - 48.83%
Administrative Percent of Total Costs	22.47%	16.95% - 27.98%

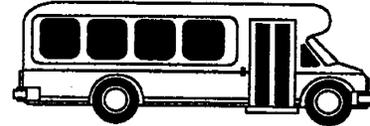
(1) Includes fringe benefits.

(2) Includes all casualty and liability expenses on all components of the system, including vehicle insurance.

(3) Includes all utility costs for all components of the system.

## CAPITAL COSTS

Table 15-4 presents the typical capital costs for public transit systems based in small urban areas. The capital costs are all expressed in terms of annual cost per vehicle and include depreciation, leases, and rental costs.



All depreciation, lease, and rental costs of all categories of capital (operations, maintenance, and administration) are included in these capital costs. Total annual system capital cost per vehicle is also shown, as is the percent of the total system cost which is allocated to capital expenses.

Table 15-4

### TYPICAL 1992 CAPITAL COSTS

Annual Capital Costs	Average Cost	Range of Typical Values
Depreciation Cost per Vehicle(1)	\$7,376	\$176 - \$14,576
Leases and Rental Cost per Vehicle(2)	\$248	\$0 - \$717
Total Capital Cost per Vehicle	\$7,625	\$471 - \$14,779
Capital Percent of Total Costs	8.73%	0.66% - 16.80%

(1) Includes all depreciation costs, including vehicles, facilities, and equipment, which were not included in the three subcategories since the data were not subdivided down as such. Not all transit systems in the sample reported these costs.

(2) Includes all rental and leasing costs, including vehicles, facilities, and equipment, which were not included in the three subcategories since the data were not subdivided as such. Not all transit systems in the sample reported these costs.

## UNIT COSTS

Total unit costs (cost per mile, per hour, or per passenger trip) have been grouped into two categories: 1) unit costs for fixed route services, and 2) unit costs for demand-responsive services. Operations, maintenance, administration, and capital costs are included in these unit costs. Table 15-5 presents typical unit costs for fixed route services operated by systems based in small urban areas. Both the unit costs of services produced (cost per mile, cost per hour) and the unit cost of services consumed (cost per trip) are presented. Table 15-6 presents the corresponding table for demand-responsive services. The unit costs of fixed route service produced in fixed route operations are typically 28 to 57 percent higher than those produced in demand-responsive operations (which typically involve smaller, lighter-duty vehicles). However, the unit cost of demand-responsive service consumed is as much as four and one-half times the unit cost of the fixed route service consumed, since demand-responsive service generally yields a much lower number of trips per mile or hour than fixed route service.

Table 15-5

### 1992 UNIT COSTS FOR FIXED ROUTE SERVICES

Unit Cost Categories	Average Cost	Range of Typical Values
<u>Service Produced</u>		
Cost Per Mile	\$2.72	\$2.11 - \$3.34
Cost Per Hour	\$37.82	\$28.54 - \$47.09
<u>Service Consumed</u>		
Cost Per Trip	\$2.15	\$1.37 - \$2.93

Table 15-6

### 1992 UNIT COSTS FOR DEMAND-RESPONSIVE SERVICES

Unit Cost Categories	Average Cost	Range of Typical Values
<u>Service Produced</u>		
Cost Per Mile	\$2.05	\$1.47 - \$2.63
Cost Per Hour	\$26.67	\$18.10 - \$35.24
<u>Service Consumed</u>		
Cost Per Trip	\$9.49	\$6.38 - \$12.60

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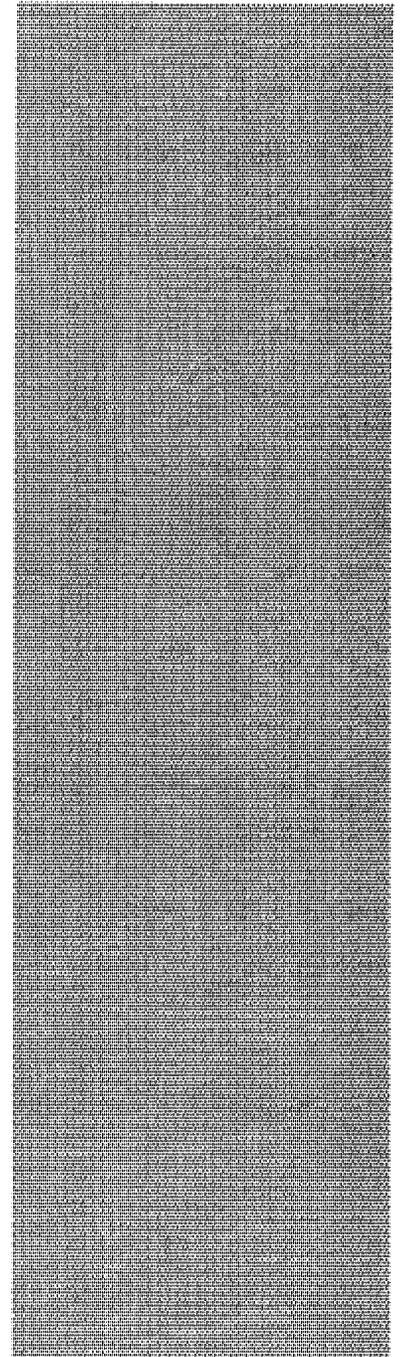
## **CONCLUSION**

This chapter presented typical costs and cost ranges for small urban public transportation providers. The previous chapter presented typical costs for rural and human service transportation providers. You should remember that the figures presented here may not necessarily be indicative of "appropriate" costs in any given locality for reasons explained in this chapter and in Chapter 11.



# *APPENDICES*

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# ***Appendix A: Recommended Chart of Accounts***

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- **Purposes and Benefits of a Standardized Chart of Accounts**
- **Detailed Accounts and Definitions**



## **APPENDIX A**

### **RECOMMENDED CHART OF ACCOUNTS**

#### **PURPOSES AND BENEFITS OF A STANDARDIZED CHART OF ACCOUNTS**

*This appendix contains the Chart of Financial Accounts recommended for use by small, urban, and rural public transportation providers. It was prepared by the Transportation Accounting Consortium in 1986. This Chart of Accounts is meant to be truncated or expanded (but not materially altered) according to the needs of the local transportation system; in other words, this Chart of Accounts is meant to be flexible and adaptable.*

*The Transportation Accounting Consortium (TAC) report<sup>1</sup> included the following explanation of their standardized chart of accounts:*

*"The TAC is a voluntary alliance of eight states (Arkansas, Colorado, Florida, Iowa, Massachusetts, Michigan, North Carolina, and South Carolina) working on financial management concerns for rural and specialized transportation systems. TAC has been funded by the U.S. Department of Health and Human Services and the U.S. Department of Transportation, both of whom provide substantial funding to providers. The standardized accounting approaches developed by the States are the basis of the model that is presented here. Each State's work is based on the uniform reporting requirements developed by the U.S. Department of Transportation for urban transit systems (Section 15)...*

*"A standard chart of accounts... would ... [provide] standard account titles and definitions. Standard accounting and billing practices and standard performance measures are also encouraged by TAC... Adoption of standard account titles and definitions will allow providers to share problems, solutions, and experiences with much more benefit. It will allow industry averages to be calculated so that providers can compare their operation to their historical records or to a norm for the industry in order to determine internal strengths and weaknesses.*

*"Standardizing the accounts should also eventually simplify the reporting burden. If all providers are using the same accounts, then the various funding sources can design their reports to conform to the accounts being used. Completion of reports would entail little more than transferring account balances to the account titles on such reports....*

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<sup>1</sup>Rural Transportation Accounting: A Model Uniform Accounting System for Rural and Specialized Transportation Providers, prepared by the Transportation Accounting Consortium for the U.S. Departments of Transportation and Health and Human Services, October 1986, pp. 1-2 - 1-4.

*"A uniform chart of accounts needs to be flexible enough to fit the needs of rural and specialized providers. It should include all relevant accounts. It also should be simple enough to be used by any size operation while meeting their informational needs. The chart of accounts presented [in this appendix] attempts to meet these requirements. Each provider will probably need to eliminate those accounts that do not apply to that provider's specific operation. The provider should recognize the danger associated with modifying the account titles. Modifications may be made, but at the cost of losing the ability to compare data with peers.*

*"While a standard chart of accounts and definitions is a major step in obtaining uniform accounting results, standard accounting practices must also be used. This means that an identical transaction should be recorded the same way each time the transaction occurs and the same way by every transit system. Accounting for rural and specialized transportation providers will be uniform when a uniform chart of accounts with uniform definitions and uniform accounting practices are used."*

## **GENERALIZED CHART OF ACCOUNTS**

*The TAC Chart of Accounts is organized according to the following major headings:*

### **REVENUES**

- *passenger fares for transit service*
- *special transit fares*
- *school bus service revenues*
- *freight tariffs*
- *charter service revenues*
- *auxiliary transportation revenues*
- *nontransportation revenues*
- *taxes levied directly by transit system*
- *local cash grants and reimbursements*
- *local special fare assistance*
- *state cash grants and reimbursements*
- *state special fare assistance*
- *federal cash grants and reimbursements*
- *interest income*
- *contributed services*
- *contributed cash*
- *subsidy from other sectors of operations*

## **EXPENSES**

- *labor*
- *fringe benefits*
- *services*
- *materials and supplies consumed*
- *utilities*
- *casualty and liability costs*
- *taxes*
- *purchased transportation services*
- *miscellaneous expenses*
- *interest expense*
- *leases and rentals*
- *depreciation and amortization*
- *contributed services -- allowable expense*
- *ineligible expenses*

## **ASSETS**

- *cash and cash items*
- *receivables*
- *materials and supplies inventory*
- *other current assets*
- *work in process*
- *tangible transit operating property*
- *tangible property other than for transit operations*
- *intangible assets*
- *investments*
- *special funds*
- *other assets*

## **LIABILITIES**

- *trade payables*
- *accrued payroll liabilities*
- *accrued tax liabilities*
- *short term debt*
- *other current liabilities*

- *advances payable*
- *long term debt*
- *estimated liabilities*
- *deferred credits*

#### **CAPITAL**

- *public (governmental) entity ownership*
- *private corporation ownership*
- *private noncorporate ownership*
- *grants, donations, and other paid-in capital*
- *accumulated earnings (losses)*

## **DETAILED ACCOUNTS AND DEFINITIONS**

### **REVENUES**

#### **401 PASSENGER FARES FOR TRANSIT SERVICE**

##### **401.01 Full Adult Fares**

The revenue earned from carrying passengers who pay the full adult fare.

##### **401.02 Senior Citizens Fares**

The revenue earned from carrying passengers who pay a special reduced fare because they are older than a prescribed age limit.

##### **401.03 Student Fares**

The revenue earned from carrying passengers who pay a special reduced fare because they are enrolled in an educational institution.

##### **401.04 Child Fares**

The revenue earned from carrying passengers who pay a special reduced fare because they are younger than a prescribed age limit.

##### **401.05 Handicapper Rider Fares**

The revenue earned from carrying passengers who pay a special reduced fare because they are handicapped.

##### **401.06 Parking Lot Fares**

The revenue earned from parking fees paid by passengers who drive to park-and-ride parking lots operated by the transit company in order to utilize transit service. Revenue earned from the operation of parking lots which are not normally park-and-ride locations is collected in object class 407.05.

##### **401.99 Other Primary Rider Fares**

The revenue earned from carrying passengers who pay a special reduced fare for some reason other than those specified in items 401.02 through 401.06.

**402. SPECIAL TRANSIT FARES**

**402.01 Contract Fares for Postman**

The revenue earned by providing rides for postmen with periodic contractual payments (rather than farebox collections) being made directly from the U.S. Postal Service to the transit system.

**402.02 Contract Fares for Policemen**

The revenue earned by providing rides for policemen with periodic contractual payments (rather the farebox collections) being made directly from the police authority to the transit system.

**402.03 Special Route Guarantees**

The amounts paid by industrial firms, shopping centers, public and private universities, etc., to guarantee a minimum revenue on a line operated especially for the benefit of the payer.

**402.04 Other Special Contract Transit Fares - State and Local Government**

The revenue earned under contractual arrangements with state and local governments for transit fares other than those arrangements specified in categories 402.01 through 402.03 above.

**402.05 Other Special Contract Transit Fares - Other Sources**

The revenue earned under contractual arrangements with nongovernment entities for transit fares other than those arrangements specified in categories 402.01 through 402.3 above.

**402.06 Noncontract Special Services Fares**

The revenue earned by providing special service rides for sporting events, sightseeing, etc., where fares are not guaranteed on a contractual basis.

**403. SCHOOL BUS SERVICE REVENUES**

**404. FREIGHT TARIFFS**

**405. CHARTER SERVICE REVENUES**

**406. AUXILIARY TRANSPORTATION REVENUES**

**406.01 Station Concessions Revenue**

The revenue earned from granting rights to concessionaires to operate news stands, candy counters, etc., in transit system stations.

**406.02 Vehicle Concessions Revenue**

The revenue earned from granting rights to concessionaires to operate food and beverage services, etc., on transit system vehicles.

**406.03 Advertising Revenue**

The revenue earned from displaying advertising materials on transit system vehicles and property.

**406.04 Vehicle Ferriage Revenue**

The revenue earned from transporting vehicles in ferryboat transit service.

**406.99 Other Auxiliary Transportation Revenues**

The revenue earned from auxiliary operations other than those specified in categories 406.01 through 406.04 above.

**407. NONTRANSPORTATION REVENUES**

**407.01 Sales of Maintenance Services**

The revenue earned from performing maintenance services on property not owned or used by the transit system.

**407.02 Rental of Revenue Vehicles**

The revenue earned from leasing transit system revenue vehicles to other organizations.

**407.03 Rental of Buildings and other Property**

The revenue earned from leasing transit system building and property (other than revenue vehicles) to other organizations.

**407.05      Parking Lot Revenue**

The revenue earned from parking fees generated from parking lots not normally used as "park-and-ride" locations. Revenue earned from operating "park-and-ride" lots is reported in object class 401.06.

**407.99      Other Nontransportation Revenues**

The revenue earned from nontransportation activities other than those listed in categories 407.01 through 407.05.

**408.    TAXES LEVIED DIRECTLY BY TRANSIT SYSTEM**

**408.01      Property Tax Revenue**

The revenue earned by taxing the property within the political subdivision constituting the transit system.

**408.02      Sales Tax Revenue**

The revenue earned by taxing sales of goods and/or services that occur within the political subdivision constituting the transit system.

**408.03      Income Tax Revenue**

The revenue earned by taxing the income of persons and/or organizations located within the political subdivision constituting the transit system.

**408.04      Payroll Tax Revenue**

The revenue earned by taxing the payrolls of employers for all work performed within the political subdivision constituting the transit system.

**408.05      Utility Tax Revenue**

The revenue earned by taxing the consumption of utilities (e.g., water and sewer, gas, electric, telephone, etc.) within the political subdivision constituting the transit system.

**408.99      Other Taxes Levied by Transit System**

The revenue earned by taxation on some basis other than those specified in categories 408.01 through 408.05 when the taxing authority is the transit system.

**409. LOCAL CASH GRANTS AND REIMBURSEMENTS**

**409.01 Local General Operating Assistance**

The receipt or accrual of local government payments to help cover the operating costs of providing transit services. This category covers general operating assistance, not that based on special fares or certain expense items as described in the following categories. It includes "purchase of service" payments from local government units.

**409.02 Local Special Demonstration Project Assistance - Local Projects**

The receipt or accrual of local government payments to help cover the operating costs for special demonstration projects which are fully funded at the local level.

**409.03 Local Special Demonstration Project Assistance - Local Share for State Projects**

The receipt or accrual of local government payments to help cover the operating costs for special demonstration projects which are partially funded at the state level.

**409.04 Local Special Demonstration Project Assistance - Local Share for UMTA Projects**

The receipt or accrual of local government payments to help cover the operating costs for special demonstration projects which are partially funded by UMTA.

**409.05 Local Reimbursement of Taxes Paid**

The receipt or accrual of local government payments to help cover the cost of taxes incurred by the transit system.

**409.06 Local Reimbursement of Interest Paid**

The receipt or accrual of local government payments to help cover the cost of interest on funds borrowed by the transit system.

**409.07 Local Reimbursement of Transit System Maintenance Costs**

The receipt or accrual of local government payments to help cover the cost of maintaining transit system rolling stock, building, grounds, and equipment.

**409.08 Local Reimbursement of Snow Removal Costs.**

The receipt or accrual of local government payments to help cover their cost of removing snow from transit system property and/or transit right-of-way.

**409.09 Local Reimbursement of Security Costs**

The receipt or accrual of local government payments to help cover the cost of providing security forces on transit system property and on operating revenue vehicles.

**409.99 Other Local Financial Assistance**

The receipt or accrual of local government payments to help cover the cost of operating transit service not included in categories 409.01 through 409.09.

**410 LOCAL SPECIAL FARE ASSISTANCE**

**410.01 Local Handicapper Citizen Fare Assistance**

The receipt or accrual of local government payments to help cover the difference between full adult fares and handicapper rider fares.

**410.02 Local Senior Citizen Fare Assistance**

The receipt or accrual of local government payments to help cover the difference between full adult fares and special senior citizen fares.

**410.03 Local Student Fare Assistance**

The receipt or accrual of local government payments to help cover the difference between full adult fares and special student fares.

**410.99 Other Local Special Fare Assistance**

The receipt or accrual of local government payments to help cover the difference between full adult and special reduced fares other than for handicapper riders, senior citizens, and students.

**411. STATE CASH GRANTS AND REIMBURSEMENTS**

**411.01 State General Operating Assistance**

The receipt or accrual of state government payments to help cover the operating costs of providing transit services. This category covers general operating assistance, not that based on special fares or certain expense items as described in the following categories. It includes "purchase of service" payments from state governmental units.

**411.03 State Special Demonstration Project Assistance - State Projects**

The receipt or accrual of state government payments to help cover the operating costs for special demonstration projects which are fully funded at the state or state and local level.

**411.04 State Special Demonstration Project Assistance - State Share for UMTA Project**

The receipt or accrual of state government payments to help cover the operating costs for special demonstration projects which are partially funded by UMTA.

**411.05 State Reimbursement of Taxes Paid**

The receipt or accrual of state government payments to help cover the costs of taxes incurred by the transit system.

**411.06 State Reimbursement of Interest Paid**

The receipt or accrual of state government payments to help cover the costs of interest on funds borrowed by the transit system.

**411.07 State Reimbursement of Transit System Maintenance Costs**

The receipt or accrual of state government payments to help cover the costs of maintaining transit system rolling stock, building, grounds, and equipment.

**411.09 State Reimbursement of Security Costs**

The receipt or accrual of state government payments to help cover the costs of providing security forces on transit system property and on operating revenue vehicles.

**411.99 Other State Financial Assistance**

The receipt or accrual of state government payments to help cover the costs of operating transit service not included in categories 411.01 through 411.09.

**412 STATE SPECIAL FARE ASSISTANCE**

**412.01 State Handicapper Citizen Fare Assistance**

The receipt or accrual of state government payments to help cover the difference between full adult fares and handicapper rider fares.

**412.02 State Senior Citizens Fare Assistance**

The receipt or accrual of state government payments to help cover the difference between full adult fares and special senior citizen fares.

**412.03 State Student Fare Assistance**

The receipt or accrual of state government payments to help cover the difference between full adult fares and special student fares.

**412.99 Other State Special Fare Assistance**

The receipt or accrual of state government payments to help cover the difference between full adult fares and special reduced fares other than for handicapper riders, senior citizens, and students.

**413. FEDERAL CASH GRANTS AND REIMBURSEMENTS**

**413.01 Federal General Operating Assistance**

The receipt or accrual of federal government payments to help cover the operating costs of providing transit services, including Sections 9, and 18 funds. This category covers general operating assistance, not that based on special fares or specific expense items as described in the following categories. It includes "purchase of service" payments from federal governmental units.

**413.02 Federal Special Demonstration Project Assistance**

The receipt or accrual of federal government payments to help cover their operating costs for special demonstration projects.

**413.99 Other Federal Financial Assistance**

The receipt or accrual of federal government payments to help cover the operating transit service not included in categories 413.01 and 413.04.

**414. INTEREST INCOME**

**430. CONTRIBUTED SERVICES**

**430.01 Contributed Services - Allowable Sources**

The value of services provided at no cost to the transit operator where the value of the service can be claimed as an allowable source of revenue. The amount credited to this account should be equal to the amount debited to object class 530.

**430.03 Contributed Services - Unallowable Source**

The value of services provided at no cost to the transit operator where the value of the service cannot be claimed as an allowable source of revenue. The amount credited to this account should be equal to the amount debited to account 430.04.

**430.04 Contributed Services - Contra Account for Unallowable Source**

The amount debited to this account should be equal to the amount credited to account 430.03.

**431. CONTRIBUTED CASH**

**431.01 Direct Donation**

Contributions received from merchants.

**431.02 Fund Raising**

Efforts such as bingo events, direct mail, product sales. (Note that these categories are particularly useful for those receiving United Way Funds and reporting on them.)

**440. SUBSIDY FROM OTHER SECTORS OF OPERATIONS**

**440.01 Subsidy from Utility Rates**

The receipt or accrual of funds to help cover the cost of transit operations provided by revenues from another operation of a utility company that operates the transit service.

**440.02 Subsidy from Bridge and Tunnel Tolls**

The receipt or accrual of funds to help cover the cost of transit operations provided by revenues from tolls collected on bridges and/or tunnels owned and operated by the same entity that operates the transit system.

**440.99 Other Subsidies**

The receipt or accrual of funds to help cover the cost of transit operations from sources other than those described in 440.01 and 440.02 provided by the same entity that operates the transit system.

**EXPENSES**

**501. LABOR**

**501.01 Operators' Salaries and Wages**

The labor of employees of the transit system who are classified as revenue vehicle operators or crew workers.

**501.02 Training Salaries and Wages**

The labor of employees of the transit system who are being trained.

**501.03 Dispatchers' Salaries and Wages**

The labor of employees of the transit system who are classified as vehicle dispatchers.

**501.04 Administrative Salaries and Wages**

The labor of employees of the transit system who are classified as administrative (e.g. managers, bookkeeper).

**501.99 Other Salaries and Wages**

**502. FRINGE BENEFITS**

**502.01 Fringe Benefits - FICA or Railroad Retirement**

Payments or accruals to the federal social security or railroad retirement fund required to be made by the employer on behalf of the employee

**502.02 Fringe Benefits - Pension Plans (including long-term disability insurance)**

Payments or accruals to pension funds required to be made by the employer on behalf of the employee under the terms of pension plans.

**502.03 Fringe Benefits - Hospital, Medical, and Surgical Plans**

Payments or accruals to insurance companies required to be made by the employer on behalf of the employee under the terms of group health insurance plans.

**502.04 Fringe Benefits - Dental Plans**

Payments or accruals to insurance companies required to be made by the employer on behalf of the employee under the terms of group dental insurance plans.

**502.05 Fringe Benefits - Life Insurance Plans**

Payments or accruals to insurance companies required to be made by the employer on behalf of the employee under terms of group or individual life insurance policies wherein the employee is the beneficiary.

**502.06 Fringe Benefits - Short-Term Disability Insurance Plans**

Payments or accruals to insurance companies required to be made by the employer on behalf of the employee under terms of group short-term disability insurance plans.

**502.07 Fringe Benefits - Unemployment Insurance**

Payments or accruals to state and federal agencies required to be made by the employer on behalf of the employee to provide continued compensation for the employee for a period of time in the event the employee is laid off.

**502.08 Fringe Benefits - Worker's Compensation Insurance of Federal Employee's Liability Act Contribution**

Payments or accruals to insurance companies to indemnify the transit system against statutory damages arising from injuries or death to employees while in the employ of the transit system.

Payments or accruals to or for employees for uninsured losses for statutory damages arising from injuries or death to employees while in the employ of the transit system.

**502.09 Fringe Benefits - Sick Leave**

Payments or accruals to employees for periods of time when absent from work due to personal or family illness.

**502.10 Fringe Benefits - Holiday**

Payments or accruals to employees for periods of time when absent from work due to recognized holidays.

**502.11 Fringe Benefits - Vacation**

Payments or accruals to employees for periods of time when absent from work due to vacation earned and taken.

Payments or accruals to employees for vacation time earned, but paid off rather than taken.

**502.12 Fringe Benefits - Other Paid Absence**

Payments or accruals to employees for periods of time when absent from work due to military duty, jury duty, death in the family, etc.

**502.13 Fringe Benefits - Uniform and Work Clothing Allowances**

Payments or accruals to employees to offset the cost of uniforms or work clothing the employee must wear when engaged in his/her occupation.

The cost of uniforms and work clothing provided to employees for their wear while engaged in their occupation.

**502.99 Fringe Benefits - Other**

Other payments or accruals to or on behalf of an employee arising from employment, but not from the performance of a piece of work and not fitting any of the other fringe benefits categories, items 502.01 through 502.13.

**503. SERVICES**

**503.01 Management Services Fees**

The labor and services provided by a management service company (MSC) engaged to provide operating management to the transit system. This category covers both the continuing labor and services of MSC personnel devoted full time to the transit system and the occasional consulting and special purpose studies provided by MSC.

**503.02 Advertising Services Fees**

The labor and materials provided by an advertising agency in the development and production of advertising campaigns. Advertising media fees, regardless of whether they are paid to the advertising agency or direct to the media, are included in object class 509.08.

**503.03 Professional and Technical Services**

The labor and services provided by attorneys, accountants and auditors, investment bankers, computer service companies, engineering firms, management consultants, transit industry consultants, etc. These services generally require specialized technical knowledge and are usually performed under the supervision of the outside organization, rather than transit system personnel.

**503.04 Temporary Service Help**

The labor of persons who are not employees of the transit system, but who work for a temporary period in the capacity of a transit system employee under the supervision of transit system personnel. These people are normally obtained to perform general clerical duties (employment services, etc.).

**503.05 Contract Maintenance Services**

The maintenance of the plant and equipment, under contract or on a single job basis with an outside organization. This category is differentiated from "Professional and Technical Services," 503.03, in that the services offered are basically of a repair or maintenance nature. It is also differentiated from "Custodial Services," 503.06, which deals exclusively with janitorial labor.

**503.06 Custodial Services**

The performance of janitorial services, under contract or on a single job basis with an outside organization.

**503.07 Security Services**

The patrolling of vehicles, stations, yards, and buildings to detect and prevent criminal activity, fires, unsafe conditions, etc., such patrolling being performed by an outside security agency rather than by transit system employees.

**503.99 Other Services**

For purposes of the standard reporting form, include in "Other Services" all costs for services except for advertising fees.

**504 MATERIALS AND SUPPLIES CONSUMED**

**504.01 Fuel and Lubricants Consumed**

Costs of gasoline, diesel fuel, propane, lubricating oil, transmission fluid, grease, etc., for use in vehicles.

**504.02 Tires and Tubes Consumed**

Lease payments for tires and tubes rented on a time period or mileage basis.

Cost of tires and tubes for replacement of tires and tubes on vehicles.

**504.03 Inventory Purchases**

Items purchased for immediate consumption such as vehicle maintenance parts - cleaning supplies and office forms.

**504.99 Other Materials and Supplies Consumed**

Cost of materials and supplies not specifically identified in object classes 504.01 and 504.03 purchased for immediate consumption, or to establish bench stock e.g., vehicle maintenance parts, cleaning supplies, office forms, etc.

**505. UTILITIES**

**505.01 Utilities - Propulsion Power**

The electrical power purchased from an outside utility company and used for propelling electrically driven vehicles.

**505.02 Utilities - Telephone**

Telephone service purchased from the telephone company, including long distance and leased lines. Does not include yellow pages advertising.

**505.99 Utilities - Other**

The electrical power purchased from an outside utility company and used for all purposes, except telephone and propelling electrically driven vehicles.

**506. CASUALTY AND LIABILITY COSTS**

**506.01 Premiums for Physical Damage Insurance**

Premiums applicable to an accounting period to insure the transit system from losses through damage to its own property caused by collision, fire, theft, flood, earthquake, etc.

**506.03 Premiums for Public Liability and Property Damage Insurance**

Premiums applicable to an accounting period to insure the transit system against loss from liability for its acts which cause damage to the person or property of others.

**506.04 Payouts for Uninsured Public Liability and Property Damage Settlements**

Payments or accruals of actual liability to others arising from culpable acts of the transit system and which are not covered by public liability insurance.

**506.05 Provisions for Uninsured Public Liability and Property Damage Settlements**

Periodic estimates of liability to others arising from culpable acts of the transit system that relate to the current or a prior reporting period and which are not covered by public liability insurance. This object class also includes lump sum payments not covered by public liability insurance.

**506.06 Recoveries of Public Liability and Property Damage Settlements**

Payments or accruals of actual liability to others arising from culpable acts of the transit system and which are covered by public liability insurance.

**506.08 Premiums for Other Corporate Insurances**

Premiums applicable to an accounting period to insure the transit system from losses other than through damage to its property or liability for its culpable acts, e.g., fidelity bonds, business records insurance, etc.

**506.99 Other Insurance**

All costs for insurance not properly classified in categories 506.01 through 506.08.

**507 TAXES**

**507.01 Federal Income Tax**

The tax levied by the federal government against the transit system based on the net income of the transit system.

**507.02 State Income Tax**

The tax levied by the state government against the transit system based on the net income of the transit system.

**507.03 Property Tax**

The tax levied by the state and/or local government against the transit system based on a valuation of the property owned by the transit system.

**507.04 Vehicle Licensing and Registration Fees**

The fees assessed by federal, state, and local governments for granting authority to operate a motor vehicle.

**507.05 Fuel and Lubricant Taxes**

Sales and excise taxes incurred on purchase of fuel and lubricants.

**507.06 Electric Power Taxes**

Utility taxes incurred on purchases of electric power used for propelling electrically driven vehicles.

**507.99 Other Taxes**

Taxes levied by federal, state, and local governments against the transit system and not properly classifiable in categories 507.01 through 507.06.

**508 PURCHASED TRANSPORTATION SERVICE**

**509 MISCELLANEOUS EXPENSES**

**509.01 Dues and Subscriptions**

Fees for membership in industry organizations and subscriptions to periodical publications.

**509.02 Travel and Meetings**

Fares and allowances for transportation of transit system employees and related officials of airplanes, trains, etc.

- . expenses for food and lodging
- . charges for participation in industry conferences
- . other related business meeting expenses

**509.03 Bridge, Tunnel, and Highway Tolls**

Payments made to authorities and other organizations for the use of bridges, tunnels, highways, and other similar facilities.

**509.04 Entertainment Expense**

Costs of amusements, social activities, and incidental costs relating thereto, such as meals, beverages, lodging, transportation, and gratuities.

**509.05 Charitable Donations**

Contributions to charitable organizations made by the transit system.

**509.06 Fines and Penalties**

Payments made to cover the cost of fines and penalties incurred by the transit system.

**509.07 Bad Debt Expense**

Amounts owed to the transit system which have been determined to be uncollectible.

**509.08 Advertising/Promotion Media**

Advertising media fees and expenses, regardless of whether they are paid to an advertising agency or direct to the media. The labor and materials provided by an advertising agency in the development and production of advertising campaigns is included in object class 503.02.

511 INTEREST EXPENSE

511.01 Interest on Long-Term Debt Obligations

Charges for the use of borrowed capital on a long-term basis (the liability for which is usually represented by debt instruments) employed in the operation of the transit system. Interest charges pertaining to construction debt which are capitalized will not be reflected as interest expense. This is an obligation that lasts longer than one year.

511.02 Interest on Short-Term Debt Obligations - Allowable

Charges for the use of borrowed capital on a short-term basis used in the operation of the transit system. This is an obligation that is for less than one year and is federally allowable.

511.03 Interest on Short-Term Debt Obligations - Unallowable.

512 LEASES AND RENTALS

512.01 Leases and Rentals - Transit Way and Transit Way Structures and Equipment

Leases and rentals of the physical facilities of the types listed below that are located along the routes where transit services are offered:

- . land
- . roadway structures, i.e., tunnels, bridges, elevated structures, etc.
- . guideways, i.e., track and roadbed

512.02 Leases and Rentals - Passenger Stations

Leases and rentals of the physical facilities of the types listed below that are used for passenger stations and terminals:

- . land
- . building and structures
- . office equipment, such as cash registers

- . other equipment
- . furnishings, equipment other than office equipment
- . passenger shelters without attendants

**512.03 Leases and Rentals - Passenger Parking Facilities**

Leases and rentals of the physical facilities of the types listed below that are used to provide parking space for the automobiles of transit patrons:

- . land
- . building and structures, including paved surfaces
- . office equipment, such as cash registers
- . other equipment, such as automatic entry and exit control gates
- . furnishings, such as those for a parking fee collection booth.

**512.04 Lease and Rentals - Passenger Revenue Vehicles**

Leases and rentals of rolling stock used exclusively or predominately for providing passenger transit services.

**512.05 Leases and Rentals - Service Vehicles**

Leases and rentals of rolling stock used for purposes other than providing passenger transit services.

**512.06 Leases and Rentals - Operating Yards or Stations**

Leases and rentals of the physical facilities of the below listed types that are used for storing revenue vehicles and for dispatching trains/runs for revenue service:

- . land
- . buildings and structures
- . office equipment
- . equipment other than office equipment

- . furnishings

**512.07 Leases and Rentals - Engine Houses, Car Shops, and Garages**

Leases and rentals of the physical facilities of the below listed types that are used as maintenance facilities for revenue vehicles.

- . land
- . buildings and structures
- . office equipment
- . equipment other than office equipment
- . furnishings

**512.08 Leases and Rentals - Power Generation and Distribution Facilities**

Leases and rentals of the physical facilities of the types listed below that are used in the generation and distribution of power:

- . land, if used only for power generation and distribution
- . buildings, if used only for power generation and distribution
- . office equipment
- . power generation and distribution equipment
- . furnishings

**512.09 Leases and Rentals - Revenue Vehicle Movement Control Facilities**

Leases and rentals of the physical facilities of the types listed below that are used to control the movement of revenue vehicles:

- . land, if a building devoted exclusively to revenue vehicle movement control is situated thereon
- . buildings, if devoted exclusively to revenue vehicle movement control

- . office equipment
- . other equipment, such as communication equipment, traffic control computers, etc.
- . furnishings

**512.10 Leases and Rentals - Data Processing Facilities**

Leases and rentals of the physical facilities of the types listed below that are used for performing data processing services:

- . land, if a building devoted exclusively to data processing services is situated thereon
- . buildings, if devoted exclusively to data processing services office equipment
- . office equipment
- . other equipment, particularly main frame and auxiliary computer equipment
- . furnishings

**512.11 Leases and Rentals - Revenue Collection and Processing Facilities**

Leases and rentals of the physical facilities of the types listed below that are used for collecting, counting, storing, and transporting revenue collections:

- . land, if a building devoted exclusively to revenue collections and processing is situated thereon
- . building, if devoted exclusively to revenue collection and processing
- . office equipment
- . other equipment, including fareboxes, vaults, money counting and wrapping machines, etc.
- . furnishings

**512.12 Leases and Rentals - Other General Administration Facilities**

Leases and rentals of the physical facilities of the types listed below that are used for performing the general administrative functions of the transit system:

- . land
- . building
- . office equipment
- . equipment other than office equipment
- . furnishings

**513 DEPRECIATION AND AMORTIZATION**

**513.01 Depreciation - Transit Way and Transit Way Structures and Equipment**

Depreciation of the physical facilities of the types listed below that are located along the routes where transit services are offered.

- . roadway structures, i.e., tunnels, bridges, elevated structures, etc.
- . guideways, i.e., track and roadbed

**513.02 Depreciation - Passenger Stations**

Depreciation of the physical facilities of the types listed below that are used for passenger stations and terminals:

- . buildings and structures
- . office equipment
- . equipment other than office equipment
- . furnishings
- . passenger shelters without attendants

**513.03 Depreciation - Passenger Parking Facilities**

Depreciation of the physical facilities of the types listed below that are used to provide parking space for the automobiles of transit patrons:

- . buildings and structures, including paved surfaces
- . office equipment, such as cash registers
- . other equipment, such as automatic entry and exit control gates
- . furnishings, such as those for a parking fee collection booth

**513.04 Depreciation - Passenger Revenue Vehicles**

Depreciation of rolling stock used exclusively or predominantly for providing passenger transit services.

**513.05 Depreciation - Service Vehicles**

Depreciation of rolling stock used for purposes other than providing passenger transit services.

**513.06 Depreciation - Operating Yards or Stations**

Depreciation of the physical facilities of the types listed below that are used for storing revenue vehicles and for dispatching trains/runs for revenue service:

- . buildings and structures
- . office equipment
- . equipment other than office equipment
- . furnishings

**513.07 Depreciation - Engine Houses, Car Shops, and Garages**

Depreciation of the physical facilities of the types listed below that are used as maintenance facilities for revenue vehicles:

- . buildings and structures

- . office equipment
- . equipment other than office equipment
- . furnishings

**513.08 Depreciation - Power Generation and Distribution Facilities**

Depreciation of the physical facilities of the types listed below that are used in the generation and distributions of power:

- . buildings and structures
- . office equipment
- . equipment other than office equipment
- . furnishings

**513.09 Depreciation - Revenue Vehicle Movement Control Facilities**

Depreciation of the physical facilities of the types listed below that are used to control the movement of revenue vehicles:

- . buildings, if devoted exclusively to revenue vehicle movement control
- . office equipment
- . other equipment, such as communication equipment, traffic control computers, etc.

**513.10 Depreciation - Data Processing Facilities**

Depreciation of the physical facilities of the types listed below that are used for performing data processing services:

- . buildings, if devoted exclusively to data processing services
- . office equipment
- . other equipment, particularly main frame and auxiliary computer equipment
- . furnishings

**513.11 Depreciation - Revenue Collection and Processing Facilities**

Depreciation of the physical facilities of the types listed below that are used for collecting, counting, storing, and transporting revenue collections:

- . buildings, if devoted exclusively to revenue collection and processing
- . office equipment
- . other equipment, including fareboxes, vaults, money counting and wrapping machines, etc.
- . furnishings

**513.12 Depreciation - Other General Administration Facilities**

Depreciation of the physical facilities of the types listed below that are used for performing the general administrative functions of the transit system:

- . buildings
- . office equipment
- . equipment other than office equipment
- . furnishings

**513.13 Amortization of Intangibles**

Amortization of the following types of intangible costs of the transit system:

- . organization costs
- . franchises
- . patents
- . goodwill
- . other intangible assets

**530. CONTRIBUTED SERVICES - ALLOWABLE EXPENSES**

**550. INELIGIBLE EXPENSES**

## **ASSETS**

### **101. CASH AND CASH ITEMS**

#### **101.01 Cash**

The amount of current funds available for use on demand. They may be in the hands of financial officers or on deposit in banks and trust companies.

#### **101.02 Working (Imprest) Funds**

The amounts advanced to officers, agents, employees, masters, pursers, and others as petty cash or working funds from which certain expenditures are to be made and accounted for.

#### **101.03 Special Deposits, Interest**

The monies and bank credits specially deposited in the hands of fiscal agents or others for the payment of interest on behalf of the transit system. When interest is paid from such deposits, this account shall be credited and the appropriate accrued or matured interest liability account shall be debited.

#### **101.04 Special Deposits, Dividends**

The monies and bank credits in the hands of fiscal agents or others for the payment of dividends on behalf of the transit system. When dividends are paid from such deposits, this account shall be credited and the appropriate dividend account shall be debited.

#### **101.05 Special Deposits, Other**

The monies and bank credits in the hands of fiscal agents or others for special purposes other than the payment of interest or dividends. This includes cash or securities deposited with federal, state, or municipal authorities, public utilities or others as a guarantee for the fulfillment of obligations. When the purposes for which the deposit exists have been satisfied, this account shall be credited with the amount of the deposit disbursed or released.

#### **101.06 Temporary Cash Investments**

The book cost of investments' as time drafts receivable and time loans, bankers' acceptances, United States Treasury

certificates, marketable securities and other similar investments acquired for the purpose of temporarily investing cash. Any securities included herein must be of such a nature as to be readily convertible into cash at substantially the book value.

## **102. RECEIVABLES**

### **102.01 Accounts Receivable**

Amounts due from others (except associated companies) for material and supplies furnished and services rendered, including transportation and storage charges, property use charges, other matured rents, amounts owing by public authorities, amounts of collectible judgements, current accounts with officers and employees and other accounts and claims upon which responsibility is acknowledged by solvent concerns or individuals.

### **102.02 Notes Receivable**

The book cost of all collectible obligations in the form of notes receivable, contracts receivable and similar evidences of money receivable on demand or within a time not exceeding one year from date of issue.

### **102.03 Interest and Dividends Receivable**

The amount of current interest accrued to the date of the balance sheet on bonds, mortgages, notes and other commercial paper owned; on loans made; and on open accounts, bank deposits, etc.

The amount of dividends receivable on stocks owned.

NOTE: Receivables from affiliated companies are to be included in object class 102.04.

### **102.04 Receivables from Associated Companies**

The total of amounts receivable from associated companies which are subject to current settlement, such as balances in open accounts for services rendered, material furnished, traffic accounts, claims, rent for use of property and similar items.

Interest and dividends receivable from associated companies.

Loans, notes, and drafts for which associated companies are liable.

**102.05 Receivable Subscriptions to Capital Stock**

The balance due from subscribers upon legally enforceable subscriptions to capital stock.

**102.06 Receivables for Capital Grants**

Grant amounts receivable from federal, state, and local governments or other parties, for capital projects and acquisitions.

**102.07 Receivables for Operating Assistance**

Amounts receivable from federal, state, and local governments or other parties, for general operating assistance, special fare subsidies, demonstration project assistance, an purchase-of-service payments.

**102.08 Other Receivables**

Amounts receivable from solvent debtors based on debtor-creditor relationships other than those specified in categories 102.01 through 102.07.

**102.09 Reserve for Uncollectible Accounts**

Amounts reserved for receivables which may become uncollectible.

**103. MATERIALS AND SUPPLIES INVENTORY**

**104 OTHER CURRENT ASSETS**

**105 WORK IN PROCESS**

**105.01 Work in Process - Unbilled Work for Others**

Labor, materials, and overhead costs applied to work for others and for which the system will be reimbursed.

**105.02 Work in Process - Capital Projects**

Labor, material, and overhead costs applied to capital projects not yet completed or placed in service.

**111. TANGIBLE TRANSIT OPERATING PROPERTY**

**111.01 Tangible Transit Operating Property - Property Cost**

The cost to the transit system of acquiring the tangible property it owns and uses in its own transit operations. The cost includes the transportation charges, sales and excise taxes, installation costs, etc., necessary to place the property in an operating condition.

**111.02 Tangible Transit Operating Property - Leased-Out Property Cost**

The cost to the transit system of acquiring tangible transit operating property which it owns but leases to another party for the latter's transit operations.

**111.03 Tangible Transit Operating Property - Accumulated Depreciation**

The cumulative depreciation charges since time of acquisition for all of the tangible transit operating property items owned by the transit system.

**111.04 Sale of Asset - Operations**

The revenue from vehicles being sold after useful life, for example the 16 b2 vehicles being retired from the fleet.

**111.05 Sale of Asset - Non Operating**

**112. TANGIBLE PROPERTY OTHER THAN FOR TRANSIT OPERATIONS**

**112.01 Tangible Property Other Than for Transit Operations - Property Cost**

The cost to the transit system of acquiring the tangible property it owns but does not use in transit operations. The cost included the transportation charges, sales and excise taxes, installation costs, etc., pertaining to the property units covered.

**112.02 Tangible Property Other Than for Transit Operations - Accumulated Depreciation**

The cumulative depreciation charges since time of acquisition for all of the tangible property items covered in category 112.01.

**121. INTANGIBLE ASSETS**

**121.01 Organization Costs**

The fees paid to a state or other governmental authority for the privilege of incorporation and expenditures incident to organizing the transit system and putting it into readiness to do business.

**121.02 Franchises**

The amounts paid to a state, a political subdivision thereof or to some other governmental authority in consideration of franchises, permits, consents, or certificates running in perpetuity or for a specified term of more than one year, together with the necessary reasonable expenses incident to procuring such franchises, consents, or certificates of convenience and necessity.

**121.03 Patents**

The cost of patents, rights, licenses, and privileges necessary or valuable to the economical conduct of transit operations.

**121.04 Goodwill**

At acquisition, the difference between the total value of the transit system and the aggregate value of its separable resources and property rights, less liabilities.

**121.99 Other Intangible Assets**

The cost of any intangible assets not includable in categories 121.01 through 121.04.

**131. INVESTMENTS**

**131.01 Investments and Advances, Associated Companies**

The book cost of the transit system's investments in securities issued or assumed by associated companies.

The notes of associated companies maturing more than one year from date of issue.

The amount of advances to associated companies not subject to current settlement including accrued interest on such advances when not subject to current settlement.

**131.02 Other Investments and Advances**

The book cost of the transit system's investments in securities issued or assumed by nonassociated companies.

The notes of nonassociated companies and persons maturing more than one year from date of issue.

The cash surrender values of insurance policies carried on the lives of officers and employees when the transit system is beneficiary of such policies.

The amount of advances to nonassociated companies and individuals not subject to current settlement including accrued interest on such advances when not subject to current settlement.

**131.03 Reserve for Reevaluation of Investments**

Reserves to reflect the decline or loss in book value of securities or like assets held for investment where there appears to be a permanent impairment in value.

**141. SPECIAL FUNDS**

**141.01 Sinking Funds**

The cash, cost of securities of other companies, and cost of other assets placed on deposit or in the hands of trustees or segregated from the transit system's other assets as a sinking fund to meet obligations maturing in the future or to carry out such operations as the retirement of preferred stock or the procurement of serial bonds.

**141.02 Capital Asset Funds**

The cash, cost of securities of other companies, and cost of other assets which have been specifically set aside for the purpose of providing a fund for the acquisition of units of depreciable property.

**141.03 Insurance Reserve Funds**

The cash, cost of securities of other companies, and cost of other assets placed on deposit or in the hands of trustees to guarantee the satisfaction of obligations for losses that related to the current or a prior accounting period in instances where the transit system is a "self-insurer" in whole or in part.

**141.04 Pension Funds**

The cash, cost of securities of other companies, and cost of other assets which have been specifically set aside, placed on deposit or in the hands of trustees to provide for employee's pensions, relief, savings, and hospital benefits accruing to employees for performance of their labor services.

**141.99 Other Special Funds**

The cash, cost of securities of other companies, and cost of other assets which have been specifically set aside for special purposes not provided for in categories 141.01 through 141.04.

**151. OTHER ASSETS**

**151.01 Prepayments**

The payments for items whose benefit is to be realized subsequent to the time of the payment, e.g., prepaid rent, prepaid insurance, etc. As the benefit is realized, the prepayment will be reduced and the appropriate expense category charged.

**151.99 Other Miscellaneous Other Assets**

The cost of all assets not provided for in any other asset object class.

## **LIABILITIES**

### **201. TRADE PAYABLES**

#### **201.01 Accounts Payable**

The amounts payable to others (except associated companies) for materials and services received, including use of property, other matured rents, amounts due to public authorities, amounts of payable judgements, current accounts with officers and employees, personal injury and property damage claims and other similar items.

#### **201.02 Payables to Associated Companies**

The amounts payable to associated companies which are subject to current settlement, such as credit balances in open accounts for services rendered, materials furnished, claims, rents for use of property, and similar items.

### **202 ACCRUED PAYROLL LIABILITIES**

#### **202.01 FICA Payroll Deduction Withheld**

Accrual of FICA deduction withheld from employees.

#### **202.02 Federal Income Taxes Withheld**

Accrual of federal income taxes withheld from employees.

#### **202.03 State Income Taxes Withheld**

Accrual of state income taxes withheld from employees.

#### **202.04 Other Payroll Deductions Withheld**

Accrual of other payroll deductions withheld from employees.

### **203 ACCRUED TAX LIABILITIES**

#### **203.01 Accrued Federal Income Tax Payable**

Accrual of the federal income tax the transit system will have to pay. Transit systems that do not pay federal income taxes will not need to use this account.

**203.02     Accrued State Income Tax Payable**

Accrual of the state income tax the transit system will have to pay. Transit systems that do not pay state income taxes will not need to use this account.

**203.03     Accrued Local Income Tax Payable**

Accrual of the local income tax the transit system will have to pay. Transit systems that do not pay local income taxes will not need to use this account.

**203.04     Accrued Property Tax Payable**

Accrual of the property tax the transit system will have to pay. Transit systems that do not pay property taxes will not need to use this account.

**203.05     Accrued FICA Tax Payable**

Accrual of the employer's share of the FICA payroll tax.

**203.06     Accrued Federal Unemployment Insurance Payable**

Accrual of payments to be made by the employer to federal agencies to provide continued compensation for the employee for a period of time in the event the employee is laid off.

**203.07     Accrued State Unemployment Insurance Payable**

Accrual of payments to be made by the employer to state agencies to provide continued compensation for the employee for a period of time in the event the employee is laid off.

**204     SHORT-TERM DEBT**

**204.01     Short-Term Notes Payable**

The face value of outstanding obligations in the form of notes, drafts, acceptances, and other similar evidences of indebtedness which, by their terms, do not run for a period in excess of one year, including the face value of notes receivable discounted or sold without releasing the transit system from liability as endorser thereon.

**204.02 Matured Equipment and Matured Long-Term Obligations**

The amount (including obligations for premiums) of equipment obligations, long-term obligations, and receiver's certificates which have matured, but are unpaid, without any specific agreements for extension of maturity. This category includes unrepresented bonds called for redemption.

**204.03 Current Portion of Unmatured Equipment and Long-Term Obligations**

The amount of bonds, equipment obligations, and other long-term debt obligations, including obligations maturing serially or payable in installments, which are due and payable within one year from the current period ending date, for which arrangements for refunding have not been made and for which no sinking funds have been provided.

**204.04 Matured Interest Payable**

The amount of matured (i.e., past due) and unpaid interest on obligations of the transit system, whether the cause of the failure to pay the interest is on the part of the creditor or for other reasons, except where such interest is added to the principal of the obligation.

**204.05 Accrued Interest Payable**

The amount of interest accrued to the date of the balance sheet, but not payable until after that date, on all indebtedness of the transit system, except interest which is added to the principal.

**204.06 Current Pension Liabilities**

The amount to be paid within one year of the current period ending date to retired employees, their beneficiaries, or a trustee or manager of a pension fund for the pension, savings, relief or hospital benefits accruing to employees for their labor services.

**205. OTHER CURRENT LIABILITIES**

**205.01 Unredeemed Fares**

The amount of the obligation to provide transit service upon the redemption of tickets or tokens in the possession of patrons.

**205.02 CODs Unremitted**

The net amount of CODs collected from consignees, but not remitted to shippers.

**205.03 Dividends Declared and Payable**

The amount of dividends declared, but not paid, on any issue of capital stock of the transit system.

**205.04 Short-Term Construction Liabilities**

The amount of construction retentions scheduled as due within one year of the current period ending date.

**205.99 Miscellaneous Other Current Liabilities**

The amount of obligations due within one year of the current period ending date and not properly includable in categories 205.01 through 205.04.

**211. ADVANCES PAYABLE**

**211.01 Advances Payable to Associated Companies**

The amount of advances from associated companies, whether evidenced by notes or open accounts, which are not subject to current settlement, including interest accrued thereon when such interest is not subject to current settlement.

**211.99 Other Advances Payable**

The amount of advances from individuals and companies other than associated companies, whether evidenced by notes or open accounts, which are not subject to current settlement, including interest accrued thereon when such interest is not subject to current settlement.

**221. LONG-TERM DEBT**

**221.01 Long-Term Equipment Obligations**

The face value of equipment obligations issued by the transit system which will mature more than one year from the current period ending date or, if payable in installments, the face amount of such installments not due within one year from that date. This includes equipment bonds, equipment notes, chattel mortgages and other obligations for which equipment is pledged

as security or held under a conditional sales agreement. It also includes the face value of equipment obligations issued by others, the payment of which has been assumed by the transit system, and equipment obligations so issued or assumed the maturity of which has been extended by specific agreement.

**221.02 Long-Term Bonds**

The face value of bonds, other than equipment obligations, issued by the transit system which will mature more than one year from the reporting date. Unsecured debentures and general revenue bonds are to be included in this category. This category also includes the face value of such bonds issued by others, the payments of which has been assumed by the transit system.

**221.03 Long-Term Receiver's and Trustees' Securities**

The par value of evidences of indebtedness issued or assumed by receivers or trustees acting under the orders of a court.

**221.04 Long-Term Construction Liabilities**

The amount of construction retentions scheduled as due after one year from the current period ending date.

**221.05 Other Long-Term Obligations**

The amount of long-term obligations not provided for in categories 221.01 through 22.104 and maturing more than one year from the current period ending date. This covers such items, executed or assumed, as real estate mortgages assessments for public improvements, receipts outstanding for long-term obligations and other obligations maturing more than one year from the reporting date.

**221.06 Unamortized Long-Term Debt Discount**

The amount of unamortized discount incurred in connection with the issuance of the transit system's outstanding long-term debt instruments.

**221.07 Unamortized Premium on Long-Term Debt**

The amount of unamortized premium incurred in connection with the issuance of the transit system's outstanding long-term debt instruments.

**221.08 Required and Nominally Issued Long-Term Obligations**

The par value of long-term debt of the transit system nominally issued or reacquired by the transit system and held uncanceled by it, except debt held in sinking or other special funds.

**221.99 Long Term Liabilities**

**231 ESTIMATED LIABILITIES**

**231.01 Estimated Long-Term Pension Liabilities**

The estimated obligations of the transit system, due more than one year from the current period ending date, to make payments to employees, their beneficiaries or trustees or managers of pension funds for pension, savings, relief, and hospital benefits accruing to employees for the performance of their labor services.

**231.02 Estimated Uninsured Public Liability and Property Damage Losses**

The estimated amounts required from which to pay settlements for injuries and damages to the person or property of others which are not covered by outside insurance.

**231.99 Other Estimated Liabilities**

Estimated obligations other than those for pensions and satisfaction of uninsured public liability settlements.

**241. DEFERRED CREDITS**

## **CAPITAL**

### **301. PUBLIC (GOVERNMENTAL) ENTITY OWNERSHIP**

#### **301.01 Public Entity Ownership - Investment in Transit System**

The capital invested to acquire the ownership of the transit system as a public entity.

### **302. PRIVATE CORPORATION OWNERSHIP**

#### **302.01 Preferred Capital Stock**

The par or stated value of nominally and actually issued share of preferred stock of the transit system.

#### **302.02 Common Capital Stock**

The par value of par value issues, the stated value of nonpar value issues having a stated value or the cash value of the consideration received for nonpar value issued without stated value for nominally and actually issued share of common stock of the transit system.

#### **302.03 Premiums and Assessments on Capital Stock**

The excess of the actual cash value of the consideration received upon sale of capital stock over the par or stated value of par or stated value issues.

The assessments against stockholders subsequent to original sale of capital stock. For par or stated value issues, this category covers only those assessments or parts of an assessment that represent aggregate payment for the issue in excess of the par or stated value.

#### **302.04 Discount on Capital Stock**

The excess of par value or stated value over the actual cash value of the consideration received upon sale of par value or stated value issues. Assessments subsequent to original sale on issues initially sold at a discount will be credited to this account until the total discount on the issue has been exhausted; further assessments will be credited to category 302.03.

**302.05 Commission and Expense on Capital Stock**

The expenses incurred in connection with the issuance and sale of capital stock.

**302.06 Capital Stock Subscribed**

The amount of legally enforceable subscriptions to capital stock of the transit system. The amount to be recorded herein is the subscription price. The debit for the entry is to asset object class 102.05 - Receivable Subscriptions to Capital Stock. The recognition of premium or discount will be recorded when the stock is actually issued.

**302.07 Reacquired Securities**

The par or stated value for par or stated value issues and the pro rata proportion of the carrying value of nonpar issues without stated value for shares actually issued and subsequently reacquired, but neither retired nor included in sinking or other funds. The difference between the reacquisition price, and the net of the amount recorded in this category plus any premium or less any discount pertaining to the reacquired stock, is to be debited or credited as appropriate to category 305.01 - Accumulated Earnings (Losses).

**302.08 Nominally Issued Securities**

The par value or stated value of capital stock that has been nominally, but not actually, issued by the transit system. This is a debit balance account to offset categories 302.01 and 301.02 in order to report the net amount of capital stock actually issued.

**303. PRIVATE NONCORPORATE OWNERSHIP**

**303.01 Sole Proprietorship Capital**

The investment in an unincorporated, single-owner transit system. This category shall reflect the owner's permanent investment in the transit system. The net cumulative results of operations accruing to the ownership are to be shown in category 305 - Accumulated Earnings (Losses).

**303.02 Partnership Capital**

The investment in an unincorporated, multiple-owner transit system. This category shall reflect the owner's permanent investment in the transit system. The net cumulative results of operations accruing to the ownership are to be shown in category 305 - Accumulated Earnings (Losses).

**304. GRANTS, DONATIONS, AND OTHER PAID-IN-CAPITAL**

**304.01 Federal Government Capital Grants**

The amount received from agencies of the Federal government to assist the procurement of capital assets, i.e., generally the items includable in - Tangible Transit Operating Property.

**304.02 State Government Capital Grants**

The amount received from agencies of state governments that are independent of the transit system to assist the procurement of capital assets, i.e., generally the items includable in - Tangible Transit Operating Property. Amounts originating from Federal revenue sharing funds are included in this category.

**304.03 Local Government Capital Grants**

The amount received from agencies of county, municipal, or other political subdivision governments that are independent of the transit system to assist the procurement of capital assets, i.e., generally the items includable in - Tangible Transit Operating Property. Amounts originating from Federal revenue sharing funds are included in this category.

**304.04 Nongovernmental Donations and Other Paid In Capital**

The amount received as gifts, bequests, donations, etc., from nongovernmental parties to assist the procurement of capital assets, i.e., generally the items includable in category III - Tangible Transit Operating Property.

**305 ACCUMULATED EARNINGS (LOSSES)**

**305.01 Accumulated Earnings (Losses)**

The cumulative income or deficit transferred from the income statement to the balance sheet at the close of each accounting period. The difference between reacquisition price and

carrying value for reacquisitions of the transit system's own capital stock is also to be debited or credited, as appropriate, to this category.

**305.02 Dividend Appropriations**

The amount of dividends declared on capital stock actually outstanding. This is a debit balance account to be netted with category 305.01 to obtain the net accumulated earnings (losses). The offsetting credit to entries in this account is to 205.03 - Dividends Declared and Payable.

**305.03 Restricted Accumulated Earnings**

The amount of accumulated earnings that has been restricted for specific purposes such as various contingency reserves, etc.



***Appendix B:  
List of Project Advisory  
Committee Members and  
Reviewers from Local  
Transportation Operations***

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**LIST OF PROJECT ADVISORY COMMITTEE MEMBERS**

*These guidelines were prepared under the guidance of the following persons:*

**Kathy Anderson**

*Multi-State Technical Assistance Program  
American Association of State Highway and  
Transportation Officials*

**Tara Bartee**

*Public Transit Office  
Florida Department of Transportation*

**Sanford Cross**

*Public Transportation & Rail Division  
North Carolina Department of Transportation*

**William Sapper**

*Transportation Planning Division  
Arizona Department of Transportation*

**Jerry Workman**

*Bureau of Transit Assistance  
Ohio Department of Transportation*

**Robert Works**

*Office of Transit  
Minnesota Department of Transportation*

## **LIST OF REVIEWERS FROM LOCAL TRANSPORTATION OPERATIONS**

*These guidelines were reviewed by the following individuals, who are associated with local transportation operations or other agencies as noted:*

### **ARIZONA**

**Neal Holden**  
*Bisbee Bus*  
*Bisbee, Arizona*  
*Funding: Section 16, Section 18*

### **FLORIDA**

**Leo Squillacote**  
*Neighborly Senior Services*  
*Clearwater, Florida*  
*Funding: Section 16*

**Thea Johnson**  
*Pasco County Transportation*  
*New Port Richey, Florida*  
*Funding: Section 9*

**Elaine Fitzpatrick**  
*Clay County Council on Aging*  
*Green Cove Springs, Florida*  
*Funding: Section 16, Section 18*

**Ted Waters**  
*Big Bend Transit*  
*Tallahassee, Florida*  
*Funding: Section 16, Section 18*

**Roy Blighton**  
*Jackson County Transportation*  
*Marianna, Florida*  
*Funding: Section 18*

**MINNESOTA**

**Kathy McGraw**  
Carver County Community Social Services  
Chaska, Minnesota  
Funding: Section 18

**Eugene Krosschell**  
Finance Director  
Morris, Minnesota  
Funding: Section 18

**Debra Schroeder**  
Tri-CAP  
St. Cloud, Minnesota  
Funding: Section 18

**NORTH CAROLINA**

**Chris Turner**  
AppalCART  
Boone, North Carolina  
Funding: Section 18

**Robert "Buck" Allen**  
Craven Area Rural Transportation System  
New Bern, North Carolina  
Funding: Section 18

**Nancy Harrington**  
Greenville Area Transit  
Greenville, North Carolina  
Funding: Section 18



# ***Appendix C: Annotated Bibliography***

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**American Institute of Certified Public Accountants, State and Local Government Committee, *Audits of State and Local Governmental Units* (1989).**

*This guide presents the recommendations of the AICPA State and Local Government Committee regarding the application of generally accepted auditing standards of financial statements of state and local governmental units. The guide also includes descriptions and recommendations regarding specialized accounting and reporting principles and practices for state and local governmental units.*

*Appendix C of the guide contains suggested areas for study and evaluation of internal accounting controls. Subject areas include budgets and planning, cash, investments, revenues and receivables, capital assets, procurement and payables, employee compensation, electronic data processing, and financial reporting. These areas provide a comprehensive check list of internal financial control of significant interest to management.*

**Applied Resource Integration, Ltd., *Implementation Guidelines for Coordinated Agency Transportation Services*, prepared for the Urban Mass Transportation Administration (April 1980).**

*This document is the second of a two-part series on coordinated transportation. It contains general guidelines for all aspects of implementation, including organization, management, service design, financial planning and management, regulatory and insurance considerations, contracting with agencies, and hiring staff. The chapter on financial planning and management addresses budgeting, financing, establishing a billing rate structure, and setting up management information systems.*

*Although the guidelines presented in this document do not go into much detail, the information is laid out clearly and attractively with several helpful worksheets and examples. It provides a good introduction and overview to many aspects of financial management, from both functional and methodological perspectives. Budgeting, financing, establishing and using billing rates, and developing management information systems are the major categories covered in this resource.*

**Jon E. Burkhardt, Sue F. Knapp, and Mark C. Wozny, *Assessing the Cost of Services to the Elderly: A Manual for the Aging Network*, prepared by the Institute for Economic and Social Measurements, Inc. for the Administration on Aging (December 1984).**

*This manual is aimed at individuals and organizations engaged in the provision of services, including transportation, to the elderly. Using transportation and in-home services as examples, the manual illustrates how full costs to provide such services can be computed. It goes into much depth in the area of administrative costs. Unit costs and efficiency measures are also discussed, and ranges of typical costs are presented. The manual's appendices provide guidelines on correcting financial information for inflation, converting capital expenditures into monthly equivalent costs, and typical monthly costs for capital expense items.*

*As a resource for our financial management handbook, the detailed instruction in cost assessment that this document offers is essential to budgeting and pricing. The typical costs provided in the appendices are also useful if updated to 1992 dollars. Minor shortcomings of this resource are that it includes few examples and it is geared towards agencies which provide transportation to their clients (elderly persons) but for which transportation is not a primary function. It is also fairly complex in its administrative cost computation models, although worksheets are provided for using the models.*

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**Jon E. Burkhardt "Transit Programs Can Tap an HHS Goldmine," Community Transportation Reporter, Vol. 6, No. 10, October 1988, pp. 14-15, 18.**

*This article describes the various funding sources for human service client transportation from programs within the U.S. Department of Health and Human Services. Using the State of Maryland as an example, the HHS transportation funding programs are described in context of each state agency which administers them. Section 16(b)(2), Section 18, and a state funding program for specialized transportation are also described.*

**COMSIS Corporation, Guidebook for Planning Small Urban and Rural Transportation Programs: Volume 1, prepared for the New Mexico State Highway and Transportation Department (June 1990).**

*The purpose of this guidebook is help small urban and rural communities assess their transportation needs and programs. The guidebook covers needs assessment, alternative transit systems, equipment, funding and finance, operations, community involvement, and program monitoring.*

*The section on funding and finance discusses the following topics: available funding sources, budgeting, cost allocation, accounting, price/fare management, and fare levels and fare collection. The discussion of funding sources is very complete. The guidebook does not attempt to fully discuss technical areas such as cost allocation, accounting, and budgeting. Instead, the guidebook provides references that can be investigated for more rigorous explanations.*

**Grovenor Grimes, Michigan Small Transit System Management Handbook, prepared by and for the Michigan Department of Transportation (1985).**

*This handbook, an update of the original 1970 version, is designed to cover the major aspects of the management of a small transit system in Michigan. The handbook covers topics such as system management, operations, grants and contracts, fare management and local funding, financial management, preventive maintenance, and personnel management. From a visual perspective, the manual is well designed.*

*The chapter on financial management covers accounting, allocations, internal control, inventories, and cash flow analysis. The treatment of these topics primarily relies on examples with little guidance given on techniques.*

**Malvern J. Gross, Jr. and William Warshauer, Jr., Financial and Accounting Guide for Nonprofit Organizations. John Wiley and Sons (Written In 1972, Revised In 1983).**

*This is a reference book that covers accounting, financial reporting, and controls for nonprofit organizations. The controls chapter of the book is the only part applicable for our purposes. The topics covered are budgeting, avoiding bankruptcy, obtaining the right bookkeeper, providing internal control, independent audits and investments.*

*The budgeting independent audits and investments sections are all well written and cover the material very well. Specific transit examples could be added to make these sections useful to our audience. The other topics might be good as a general information resource, but are not specific enough for our purposes.*

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**Institute for Urban Transportation, Indiana University, *Financial Management for Transit: A Handbook*, Indiana University, prepared for the University Research and Training Program of the Urban Mass Transportation Administration (April 1985).**

*This financial management handbook was developed to aid transit managers in making decisions about decreasing sources of financial support, increasing costs, shifting governmental roles, and changing regulatory requirements. The handbook contains ten chapters, each addressing a separate financial issue. The handbook is aimed at financial managers of small and medium-sized transit systems who have not had the advantage of formal training in financial management techniques. Examples are used to illustrate techniques. The manual begins by summarizing accounting, then starts on the financial management topics. The order of the topics does not seem to follow any rational pattern, and this makes the manual appear disjointed.*

*The topics covered by this manual includes the accounting summary, budgeting, cash control, inventory management, risk management (insurance), cash management, debt financing, capital expenses and automation. Some of the topics would not be applicable for smaller systems. The cash control and cash management sections may be relevant to our manual.*

**Carmen J. Jones, et. al., *Transit Fare Revenue Accountability and Protection Guidelines*, prepared by Watson, Rice & Co. for the Urban Mass Transportation Administration (Washington, DC: March 1989).**

*The loss of transit fare revenue through internal and external theft as well as fare evasion and shortchanging is a matter of increasing concern to the transit industry at the federal, state, and local levels. UMTA's Office of Technical Assistance and Safety sponsored this study to review the vulnerabilities of U.S. transit fare revenue accountability and protective practices and policies so that transit officials could be informed of methods that increase the protection of revenue.*

*The study report provides countermeasures that off-set losses during fare collection, consolidation, counting and depositing activities. In addition, an internal control review process was developed so that transit systems could determine the effectiveness of existing internal revenue protection mechanisms.*

**Sue F. Knapp, *A Model Uniform Billing and Accounting System for Coordinated Transportation Systems*, prepared by Ecosometrics, Incorporated for the Urban Mass Transportation Administration (January 1979).**

*This report, the second part of a two-part study which examines the nature and extent of legislative barriers and incentives for coordinating transportation services for the elderly and handicapped, contains a model billing and accounting system that could be useful to local agencies and organization attempting to coordinate their transportation services. This model addresses the common administrative problems (and barriers to coordination) of accounting, allocation/billing, and certification of funding sources. In addition, an analysis of the Federal regulations pertaining to fiscal management procedures is provided.*

*Cost allocation and pricing of contracted services are two areas of our financial management handbook which will draw from this source. Examples are provided for computing various types of billing rates. Also, included in the chapter which describes the recommended types of accounts (which correlate with the Section 15/TAC chart of accounts on a less detailed level), a two-page matrix presents allocation of expense types by cost category. The method of collection of non-financial data is briefly discussed. A minor shortcoming of this reference is that it provides no worksheets for the user's personal use, although the examples are presented quite clearly and could be replicated by the user.*

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**Littleton C. MacDorman, Virginia Public Transportation Performance Evaluation Study, prepared for the Virginia Department of Highways and Public Transportation (January 1984).**

*This report presents findings, conclusions, and recommendations to the Virginia Department of Transportation on data to be reported by transit systems who receive state financial assistance. The data would be stored in an information system and used in annually assessing the trend of individual system performance and recommending areas for state technical assistance.*

*The study reviewed five other state transit reporting systems and identified strengths and weaknesses. Fifteen Virginia transit systems were reviewed to ascertain the types of financial and non-financial information routinely collected for management and performance purposes. The report documents how sparse the availability of information maintained by transit systems. Most small urban and rural systems adopt either financial management and reporting procedures of the local government entity or less.*

**Kenneth Malkowski and Thomas Bergeron, State Mechanisms for Improving Cash Flow to Transportation Providers, Transportation Accounting Consortium (November 1983).**

*Cash flow problems experienced by smaller and rural public transportation providers are often tied to operating assistance subsidies. Many small and rural transportation providers are often supported by state operating funds and human service purchase contracts. For the transportation operator, there is often an unavoidable delay in the time it is reimbursed. The problem is multiplied by the number of funding sources. Cash flow problems are surmountable. The mechanisms to relieve cash flow problems adopted by five consortium states include advance payment of state operating assistance, bonding authority, and a revolving loan fund.*

**Patrick D. Mayworm, Armando M. Lago, and Sue F. Knapp, A Manual for Planning and Implementing a Fare Change, prepared for the U.S. Department of Transportation, Urban Mass Transportation Administration, August 24, 1984.**

*This manual is designed to assist senior transit managers and transit board members in planning and implementing fare changes. It outlines the process that should be undertaken to ensure that the most efficient and equitable fare plans are submitted to policy-makers for approval. A review of fare options is included.*

**Brian McCollom and Lewis Polin, Cost Analysis Methodology for Demand-Responsive Service, prepared by COMSIS Corporation for the Maryland Mass Transit Administration (October 1988).**

*This workbook was designed for agencies providing demand-responsive services. The workbook provides step-by-step procedures for developing a fully allocated cost model that meets the requirements in the UMTA Private Enterprise Policy. It shows how this model can be used to determine the current costs of a specific service and to estimate the marginal costs of making service changes. The workbook also contains a chapter on developing cost models (and thereby budgets) for future years.*

*The procedures are presented using an integrated case study example based on actual operating data from the Urban Rural Transportation Alliance in Howard County, Maryland. Each step of the procedure is presented on the left-facing page of the workbook. It is followed on the right-facing page with the application of the step to the URTA data. While the procedures are clearly presented, this presentation style makes the document long because the description most steps does not use a full page.*



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**Price Waterhouse, Fully Allocated Cost Analysis, prepared for the U.S. Department of Transportation and the Urban Mass Transportation Association (April 1987).**

*This manual develops cost allocation models through a building block approach. First, the costs to be included in the cost pool to allocate are discussed. Then, the basics of allocating these costs are discussed. The section on basics is followed by a section on additional complexities in cost allocation. Finally, principles for the treatment of costs that are unique to public and private sector transit providers are discussed.*

*The format of the manual, starting with the basics and adding the additional complexities after the basics are discussed, is a good learning tool but might create a section that is too lengthy for our purposes. The manual covers the material very well and if a transit system followed it, they would produce a good cost allocation model on which to base their pricing. The manual is geared more for large systems and the writing style is very formal, technical and would probably be too difficult for small transit accountants to follow.*

**Sandra Rosenbloom, et. al., Cost Analysis for Social Service Agency Transportation Providers, prepared by the University of Texas at Austin for the Urban Mass Transportation Administration (January 1981).**

*This report presents a workbook for identifying and analyzing the costs to provide transportation services by social service agencies and small community transportation systems. It provides a step-by-step method for identifying all activities and functions involved in providing transportation services, determining the costs of these activities and functions, and calculating and interpreting unit costs.*

*A number of areas which will be included in the financial management handbook are discussed in this document. Identification of all costs associated with providing client transportation is a prelude to budgeting. Expense types are broken down into functional categories on a one-page matrix-style worksheet. However, the expense items on the matrix are very limited and the example provided does not show all of the items allocated to functional categories. Unit cost calculation methods are provided, although the document stops short explaining how they can be used for pricing purposes. Comparison unit costs are provided, along with a number of arguments of why one should not make comparisons. Overall, the writing style of this report is rather annoying; the reviewer found it condescending. The examples provided frequently contained typographical errors (or mathematical errors).*

**George M. Smerk, Financial Planning Techniques: What Elements are Included In a Good Financial Plan?, Proceedings of the Conference on Evaluating Alternative Local Transportation Financing Techniques (April 1985).**

*This paper presents the required elements of a financial plan which precedes and serves as input to the annual budgeting process. Financial planning identifies needs, develops managerial strategies, helps make the best use of limited resources, may reduce uncertainty, and helps educate the public and public officials. Transit systems should develop a strategic plan which, is not only a capital investment plan, but, an integration of long- and short-term investment decisions with operational and human resource decisions.*

*The budget process turns ideas and desires about a financial plan into a concrete, annual plan. Budgeting is detailed planning and implementation of key decisions of the financial world of transit including expansion of service areas, inflation-sensitive financing, predicting fares, elasticity of demand, and the transit system's ability to control its cost.*

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**Transportation Accounting Consortium, A Model Accounting System for Rural and Specialized Providers (October 1986).**

*This manual was written under the direction of the Transportation Accounting Consortium to promote uniform accounting practices among rural and specialized providers. The Consortium was a voluntary association of agencies from eight states -- Arkansas, Colorado, Florida, Iowa, Massachusetts, Michigan, North Carolina, and South Carolina -- that wanted to develop an aid for helping rural and specialized transportation providers develop effective accounting systems.*

*The first four chapters of the manual provide an overview of accounting principles, describe how to set up or change an accounting system, present the recording of transactions, and discuss the reconciliation of accounts at the end of the fiscal year. Clear examples are presented throughout these chapters. A chart of accounts is recommended that is based on Section 15 accounts that have been modified to reflect the rural and specialized operating environment. These chapters are clear and provide a good overview of accounting. The chapters suffer from their visual presentation of information.*

*The last two chapters cover financial management and budgets, automation, internal controls, and rate setting. While the treatment of these topics is limited, it does provide a useful overview of some important issues.*

**Transit Marketing Management Handbook: Pricing, U.S. Department of Transportation, Urban Mass Transportation Administration, Office of Transit Management, March 1976.**

*This document discusses the use of pricing strategy as one component of the process of marketing transit services. It covers elasticity (the relationship between fare level and demand for service), fare structure, and fare collection. Case histories are presented as examples.*

**1991 Transit Operating and Financial Statistics: Transit System Statistics for Calendar/Fiscal Year 1990, produced by the American Public Transit Association, Washington, D.C.**

*This document presents detailed Section 15 financial and operating data for transit systems in urbanized areas. Detailed data are presented for each system; summary data are presented for all U.S. systems. Systems are organized by population of the urbanized areas in which they are located.*

**Transit Profiles: Agencies in the Urbanized Areas with a Population of Less than 200,000 for the 1990 Section 15 Report Year, prepared by the U.S. Department of Transportation, Federal Transit Administration, December 1991.**

*This document consists of individual profiles for each transit reporting agency located in an Urbanized Area with a population of less than 200,000. The data contained in each profile consists of general and summary reports, as well as modal, performance, and trend indicators for the 1990 report year.*