# Paying for Transit Operations:
# Challenges and Solutions for the Chicago Transit Authority

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Submitted to the Department of Urban Studies and Planning
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# PAYING FOR TRANSIT OPERATIONS: CHALLENGES AND SOLUTIONS FOR THE CHICAGO TRANSIT AUTHORITY

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ABSTRACT

This research identifies the challenges Chicagoland must confront to maintain a quality transit system. It analyzes the organizational and funding structure of the Regional Transportation Authority and its three service providers, including the Chicago Transit Authority. This investigation revealed that the greatest regional challenges are declining ridership (especially on bus) and increasing congestion from limited subsidies and a cost recovery statute.

To address these challenges a series of alternatives were evaluated using a framework that considers revenue potential, incidence, side effects, and political feasibility. Based on this analysis, a four part strategy is recommended:

1. Change the current distribution formula. Unless a new allocation formula is established, CTA may not benefit from increased resources. The new formula should reduce reliance on discretionary funds by stabilizing current funding levels to the three service providers.
2. Increase RTA revenues. Currently the two wealthiest counties in the region (DuPage and Lake) pay significantly less than Cook County while enjoying comparable service. The RTA should increase their sales tax contributions to improve regional equity and increase resources. These resources should be used to address growing paratransit needs.
3. Develop a set of performance measures that respond to distinct transit markets. Rather than focusing exclusively on the cost recovery ratio, which risks the long-term vitality of the system, the RTA should develop a set of performance measures that maximize efficiencies within markets. This will allow the region to control costs, while still protecting weaker markets like bus and paratransit.
4. Include a transit pass as part of the personal vehicle registration tax. Having people prepay for transit services will provide an incentive for replacing some automobile trips, while generating regional subsidies. In the short run, this funding mechanism will serve as an incentive for RTA to promote fare integration. If expanded over time, it offers RTA the opportunity to increase transit service.

The above recommendations will help reverse the current negative trends and stabilize ridership; however to increase ridership and mode share, more subsidy will be needed. Other promising revenue generators should be considered in the future to meet these goals.

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Over the past 9 months I have had the privilege to work with Tejus Kothari, an undergraduate researcher working towards a dual degree in urban studies and civil engineering. Tejus collected data, searched for newspaper articles, and developed portions of the text in Chapter 5. Even when I felt stumped or overwhelmed, I could always rely on Tejus to be making steady progress.

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On a personal note, I would like to thank my family, friends, and roommates for all their love and support (and emergency editing). Without Jessica Katz and Desiree Sideroff, I would not have finished on time and I feel lucky to have friends who are willing to drop everything and help me out. I am especially thankful to Reino Makkonen, who got me through the best (and worst) parts of this project.

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# 1. INTRODUCTION

The purpose of this research is to identify the challenges that transit agencies face in paying for transit operations, as well as to investigate the potential for alternative funding sources to help transit agencies maintain and expand their current services. This research focuses primarily on the Chicago Transit Authority, but the challenges and opportunities identified also provide insight into other large transit agencies in the United States, including the Massachusetts Bay Transportation Authority and New York City's Metropolitan Transit Authority.

## 1.1 OBJECTIVES

This research is intended to support public transit providers by identifying funding mechanisms that are politically feasible and responsive to the trends in transit operations. The following four objectives were developed to realize this goal:

1. Articulate the basic characteristics and inherent flaws associated with traditional funding mechanisms for transit operations;
2. Document the trends associated with the different elements of transit expenditures, revenues, and public subsidies;
3. Understand the interrelationship between transit service and regional politics; and
4. Provide the Chicago Transit Authority with a set of funding strategies to address the challenges associated with funding transit operations.

## 1.2 MOTIVATION

In his class *Public Transportation Service and Operations Planning*, MIT Transportation Professor Nigel H.M. Wilson identifies three primary benefits associated with a strong public transit system:

- **Equity.** Access and mobility for those who cannot or do not choose to drive;
- **Congestion.** The need for a high-quality alternative to the private automobile; and
- **Land use influence.** Public transport is a necessary, but not sufficient, way to change existing land use patterns. It is most effective at supporting a vibrant downtown commercial business district. On a local scale, rail transit also contributes to increased property values.

Professor Wilson also identifies environmental benefits and reduced energy consumption as potential reasons to support public transit, but indicates that to-date car technologies have been far more effective at leveraging these benefits.[1]

[1] Transit also generates high paying jobs for people with low skills, which represents an important secondary benefit of a strong transit system.

Despite these benefits, only a handful of regions in the United States have invested sufficient resources to maintain thriving transit systems. National ridership was as high as 23.4 billion unlinked trips in 1946, but declined significantly over the following quarter century. Since 1972 transit has enjoyed a modest but sustained recovery, increasing annual unlinked trips from 6.3 billion to 9.5 billion in 2001.[2] However, despite this positive trend, overall mode share continues to decline. In 2000 the U.S. Census reported that public transit carried only 4.6 percent of work trips, while 88 percent commuted by personal motor vehicle (American Public Transportation Association, 2003). As a result of the declining demand, transit agencies face escalating costs per rider and per revenue vehicle mile. Furthermore, cities continue to sprawl and automobile-related congestion and pollution continue to rise. Both trends further degrade transit's ability to compete with the private automobile.

The capital costs associated with public transit include rail infrastructure, rail cars, stations, signaling systems, buses, and maintenance facilities. These expenses generally represent large and lumpy expenditures by the transit agency. Oftentimes they are financed in part by the federal government. Once the capital system is in place, a transit agency must identify sufficient resources to pay for operations. Labor-related expenses, including salaries and wages, fringe benefits, and services, represented more than 80 percent of transit operation expenses nationwide in 2001. Other operations expenses include materials and supplies, fuel, and casualty and liability costs (American Public Transportation Association, 2003).

Transit agencies fund operations via two primary sources: operating revenue and public subsidy. Operating revenue comes primarily from passenger fares; however, a minor amount also comes from other sources such as park-and-ride lots, advertising, and concessions. At present, the majority of public subsidy for transit comes from state, regional and local tax sources. Many regions have identified dedicated funding streams, such as a regional sales tax or a state gas tax. A few regions draw from their respective state's general fund to pay for transit operations, while others use property tax contributions. Until 1998 the federal government also contributed funding for transit operations. While the Federal government continues to provide some funding to smaller properties, it has discontinued operating funds to large agencies such as the Chicago Transit Authority (CTA).

How to fund existing services and service enhancements is a perennial challenge for transit managers. They must constantly identify ways to allocate limited resources so as to balance the demands of a complex set of stakeholders, including politicians, labor, and community groups. Because of their private sector history, they are often expected to perform like a for-profit company while still managing a complex set of public goals. This report aims to help transit managers better meet the challenge of providing high quality transit services within the constraints of a public sector agency.

[2] While ridership has increased at an aggregate national level, the results from individual systems vary. Furthermore, a portion of the increased ridership has been attributed to new rail investments, not just increased ridership on existing systems.

## 1.3 METHODOLOGY

The following section describes the methodology used to develop the findings, analysis, and recommendations presented in this report. It discusses the approach, tools, and relevant resources used to develop the following chapters: Chicagoland Case Study, Trend Analysis, and Funding Alternatives.

### Chicagoland Case Study

The case study systematically documents the challenges that the agency and the region face in funding transit operations. The CTA case study exhibits several of the funding challenges identified in the problem statement. For example, the funding formula in the Chicago Metropolitan Area was determined based on geographic interests rather than service needs. As a result, the Chicago Transit Authority provides 80 percent of the service in the region, but receives less than 50 percent of the dedicated sales tax revenue. In this case, the policy that led to the allocation strategy reflects the special interests of powerful suburban stakeholders, rather than of the service goals of the region.

The Chicagoland case study was developed from three primary information sources: existing literature, budget documents, and expert interviews. The discussion of allocation strategies draws heavily from the 1983 MIT master thesis written by Annette Demchur. Financial information comes from the Regional Transportation Authority's (RTA) annual budget documents, including the *Northeastern Illinois Comprehensive Annual Financial Report for the Year Ended December 31, 2001 and Independent Auditors' Report* (Regional Transportation Authority, 2002a). In addition to the written information, the author conducted over 20 interviews by phone and in person over a twelve month period beginning in March 2003. Interviews were conducted with CTA and RTA staff, Chicago transportation advocates, and national transportation experts. A complete list of interviews is included in Appendix B.

### Trend Analysis

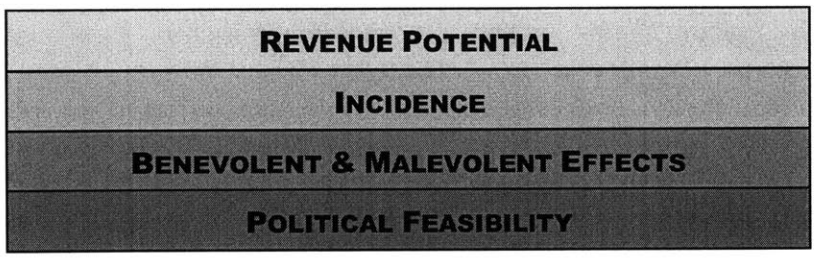
The primary purpose of the time series analysis is to build on previous research to gain a better understanding of how CTA operations expenditures change over time. The CTA presents an excellent opportunity to do trend analyses because "its basic structure has changed little in more than 50 years" (Savage, 2004). The trend analysis prepared for this report draws heavily from a dataset provided by Northwestern University economist Ian Savage. This dataset was initially generated by Eric Peterson for his PhD dissertation. The dataset originally spanned from 1948 to 1997. The author updated the dataset to cover the years 1998 through 2001. To update the dataset, the author first attempted to regenerate the data for 1996 and 1997 to confirm that she was drawing from the correct sources. The author also relied heavily on Jason Lee from the Chicago Transit Authority to provide additional data on topics of recent concern, including paratransit and the decline of federal subsidies. The trends considered for this analyses fall into three primary categories: revenue, subsidy, and expenditures. All financial information is presented in 2001 dollars.

## Funding Alternatives

The findings from the Chicagoland case study and the trend analysis revealed that the CTA requires new and creative funding sources in order to maintain and expand service in the coming decades. To address this need, the author generated a set of eleven funding alternatives that ranged from seeking enhanced federal funds to imposing new taxes at the city and/or regional level. This list was created based on relevant literature, expert interviews, and discussions with MIT research advisors. Chapter 5 presents the full list of funding alternatives, along with a brief description of potential benefits for both the Chicago Transit Authority and the region as a whole.

After generating the set of funding mechanisms, the author developed an evaluation framework to systematically analyze the proposed resources. The framework consists of four main categories: revenue potential, incidence, benevolent/malevolent effects, and political feasibility (Figure 1-1). These evaluation categories were identified using public finance and transportation policy literature, as well as feedback from MIT research advisors. A series of defining questions was developed to furnish details for each main category. These questions explore a variety of key issues including equity impacts, effectiveness, and anticipated stakeholder responses.

***Figure 1-1. Funding Evaluation Framework Categories***




The final framework is presented in Figure 1-2. The author tested and refined the framework by evaluating the following three funding alternatives:

- **Collar county tax increase.** Increasing the collar county portion of the regional sales tax.
- **Transit fee.** Including pre-paid transit pass as part of the automobile registration process.
- **Parking tax.** Implementing a flat fee parking tax on off-street commercial spaces.

The parking tax and transit fee alternatives were selected for further analysis because they represent creative funding streams that transit managers typically do not consider. The author chose to evaluate the collar county alternative based on strong internal interest at the CTA. The author was able to conduct a full analysis for the transit fee and the collar county tax. She was not able to completely evaluate the parking tax alternative because data identifying the number of off-street commercial parking spaces outside of the central business district could not be found. The summary of the parking tax alternative contained in Section 5.4 presents the analysis completed to-date and reflects on the potential for future research. While this report only uses the Funding Evaluation Framework to investigate the three potential revenue streams, it is the author's hope that the CTA and/or future MIT researchers will use this tool to analyze additional funding alternatives.

***Figure 1-2. Funding Evaluation Framework***

| Revenue Potential |
|---|
| ▪ What is the revenue potential for the CTA? |
| ▪ What is the revenue potential for the region? |
| ▪ Is the tax effective?<br>– Does the revenue potential sufficiently address the short- and long-term funding needs at CTA?<br>– Does the funding source increase the predictability and stability of CTA's current funding sources (e.g., does it balance or exaggerate the cyclical pattern of the sales tax)? |
| ▪ Does it have relatively high or low collection and compliance costs? |

| Incidence of the Tax |
|---|
| ▪ Who bears the burden (e.g., consumer, producer)? If possible, estimate based on elasticity. |
| ▪ Is the funding source exportable? What portion of the tax is paid by people who live outside of the jurisdiction (i.e., people who do not vote for the tax)? |
| ▪ Is the tax equitable?<br>– Is it progressive or regressive (vertical equity)?<br>– Do people with similar incomes and preferences pay the same (horizontal equity)?<br>– Do people who pay the tax benefit from improved transit service (beneficiary principle)? |
| ▪ Does the CTA's ridership pay more or less? |

| Benevolent/Malevolent Side Effects |
|---|
| ▪ Is the funding mechanism efficient? Does it distort people's spending habits or encourage people/businesses to relocate in order to avoid the tax? |
| ▪ Does the tax provide incentives for current riders to use automobiles more or less? |
| ▪ Does the tax provide incentives for businesses and residents to use automobiles more or less? |
| ▪ Does the tax significantly encourage (or discourage) businesses and residents to locate in transit-oriented areas? |
| ▪ How will the tax influence CTA (and the Region's) service delivery? |
| ▪ Will the tax encourage the CTA to advocate politically for policies that support (or hurt) transit? |

| Political Feasibility |
|---|
| ▪ Are there legal or institutional barriers to implementing the funding alternative? |
| ▪ Who would administer the tax? Who would levy the tax? |
| ▪ Is the tax broad-based? Does it have the potential to stimulate broad symbolic anti-tax opposition? |
| ▪ Is the tax focused on powerful interest groups (e.g., businesses) likely to generate sustained well-financed opposition? |
| ▪ If the funding source is not currently feasible, could it be politically feasible in the future, given a favorable set of circumstances? |

## 1.4 Overview of Report Structure

This report is divided into the following 6 chapters:

- **Chapter 1** ***Introduction.***
- **Chapter 2** ***Problem Statement.*** This chapter presents the findings from the literature review. The first section provides an overview of the existing resources, documenting key contributions of past researchers, while also presenting the limitations and gaps in this body of work. The next three sections focus on documenting current trends and challenges associated with transit revenues, expenditures, and subsidies in the United States.
- **Chapter 3** ***Chicagoland Case Study.*** This chapter explains the funding mechanisms and organizational structures related to transit provision in the Chicago Metropolitan Area. The last section of this chapter presents a series of short- and long-term challenges that transit in Chicagoland must overcome. This chapter is intended to demonstrate how the general problems outlined in the literature review play out in a real world setting.
- **Chapter 4** ***Trend Analysis.*** This chapter presents a 54-year time series analysis of revenue streams, subsidies, and expenditures for the Chicago Transit Authority (from 1948 to 2001). The data set was assembled by Eric Peterson, a doctoral student at Northwestern University and generously provided by transportation economist Ian Savage, also from Northwestern University. This chapter considers how past trends should inform future funding and policy decisions.
- **Chapter 5** ***Funding Alternatives.*** The first part of this chapter briefly presents 11 alternative funding mechanisms that could be used to increase funding for transit operations. The majority of the chapter is dedicated to evaluating three of the most promising alternatives using the Funding Evaluation Framework presented in Chapter 1.
- **Chapter 6** ***Recommendations & Conclusions.*** This chapter begins by reflecting on the validity of the hypotheses presented in Section 1.3. The next two sections present recommendations for the Chicago Transit Authority and the larger Chicagoland region, while the fourth section presents recommendations for federal policies to be considered in the upcoming reauthorization of the federal transportation legislation. The final section presents future research opportunities.

This document also includes three appendices: Bibliography (Appendix A), List of Interviews (Appendix B), and Acronyms (Appendix C).

# 2. PROBLEM STATEMENT

This chapter provides an overview of relevant trends in transit operations in the United States to establish a foundation for the challenges that Chicagoland must confront. It draws on the work of transportation economists, transit policy and management experts, and public finance specialists. Research published in the Transit Cooperative Research Program (TCRP) reports proved invaluable. This chapter also relies on statistics prepared by the National Transit Database and the Bureau of Transportation Studies. Section 1 provides an overview of the existing resources, documenting key contributions of past research, while also presenting the limitations and gaps in this body of work. Sections 2 and 3 focus on documenting the current condition of transit revenues and expenditures in the United States. Finally, section 4 investigates issues related to operating subsidy, including regional funding challenges and the role of politicians in determining funding levels. This section also evaluates traditional funding sources and considers relevant trends in capital subsidies.

## 2.1 OVERVIEW OF EXISTING LITERATURE

The literature review and background study for this report focused on several bodies of research, including transportation policy and economics, transit management, capital finance, state and municipal finance, and transportation statistics. The author relied heavily on the TRANSPORT search engine, which combines databases from three sources: TRIS (supported by the Transportation Research Board), IRRD (supported by the Organization for Economic Co-operation and Development), and TRANSDOC (supported by the European Conference of Ministers). The database can be accessed by MIT students and faculty through the MIT library website at http://libraries.mit.edu/get/transport. The author also relied on key resources posted on transportation websites, including the American Public Transportation Association (APTA) and the National Transit Database (NTD). The Regional Transit Authority and the three service providers also present valuable documents on their websites. Bibliographies of crucial research documents uncovered additional resources that did not surface during the library or web searches. Relevant resources were also identified through personal interviews with transportation and finance experts. The bibliography presented in Appendix A includes documents referenced in this report, as well as additional documents that provided valuable background information during the literature phase of this work.

The majority of articles on transit funding focus on capital costs. A summary of the relevant capital financing tools is provided at the end of Section 2.3. The large lump-sum investments of capital projects tend to overshadow the issue of annual operating expenses in the research. The high degree of federal participation in capital financing also increases its prominence in the transportation literature. Federal decision makers are more willing to pay for capital projects because they generate good-will among constituents. It is much less likely that politicians will receive praise for supporting daily operations or maintenance. The fact that such a large portion of funds emanate from one source spurs innovation and discussion. While capital finance is significant, there is also a need to address operations and maintenance concerns. So much infrastructure has now been built that the intelligent operations and maintenance of existing

facilities is as important (if not more) than new capital projects. However, because operations and maintenance is a local and state responsibility, very little research attention has focused on these issues.

Most of the discussion around transit operations has focused on the negative trends in the operating deficit and the increasing need for governmental subsidy. Economists investigating these trends have tended to focus on two primary topics:

- Has the presence of transit subsidies led to increases in the operating deficit?
- Can transit subsidies be justified because they generate a positive social benefit?

Another set of literature focuses on funding alternatives for transit operations. This literature came out of the 1970s and 1980s in response to the growing operating deficits. The author identified case studies for a number of transit agencies including MARTA in Atlanta, the MBTA in Boston, and the MTA in New York City. These studies were sponsored by a variety of sources including the Urban Mass Transit Administration (the precursor to the Federal Transit Administration), individual transit agencies, and academic institutions. With the exception of the TCRP Report 31, *Funding Strategies for Public Transportation,* the author did not find any recent evaluations of funding alternatives for transit operations.

A final set of literature focuses on documenting the trends in transit operations. The author relied heavily on both the National Transit Database and the Bureau of Transportation Statistics to better understand trends in transit operations. While these resources document key changes over time, they typically do not attempt to explain the changes or offer solutions to negative patterns.

## 2.2 Trends in Operating Costs

Transit began as a private sector endeavor in the early 1800s in response to the desire of urban residents to find less crowded housing at a distance from their work sites. "The supply of public transportation was provided by individual entrepreneurs, using horse-drawn carriages, who saw themselves selling individual rides" (Salvucci, 2003c). As a result of its private sector history, transit is often held to private sector standards, despite the fact that it is a natural monopoly and forced into second best pricing by the automobile. Furthermore, unlike a private organization, whose primary goal is to maximize profits, public agencies have a broader mission that includes a number of goals, which often conflict with profit maximization and in many cases conflict with one another. Public transit goals include:

- Provide a cost effective service;
- Provide a service that is competitive with the private automobile;
- Mitigate congestion and pollution;
- Serve captive riders (individuals who cannot operate or cannot afford an automobile);
- Increase the transportation choices in a region; and
- Pay labor a living wage.

The remainder of this chapter considers how transit agencies address these goals with a constrained set of resources.

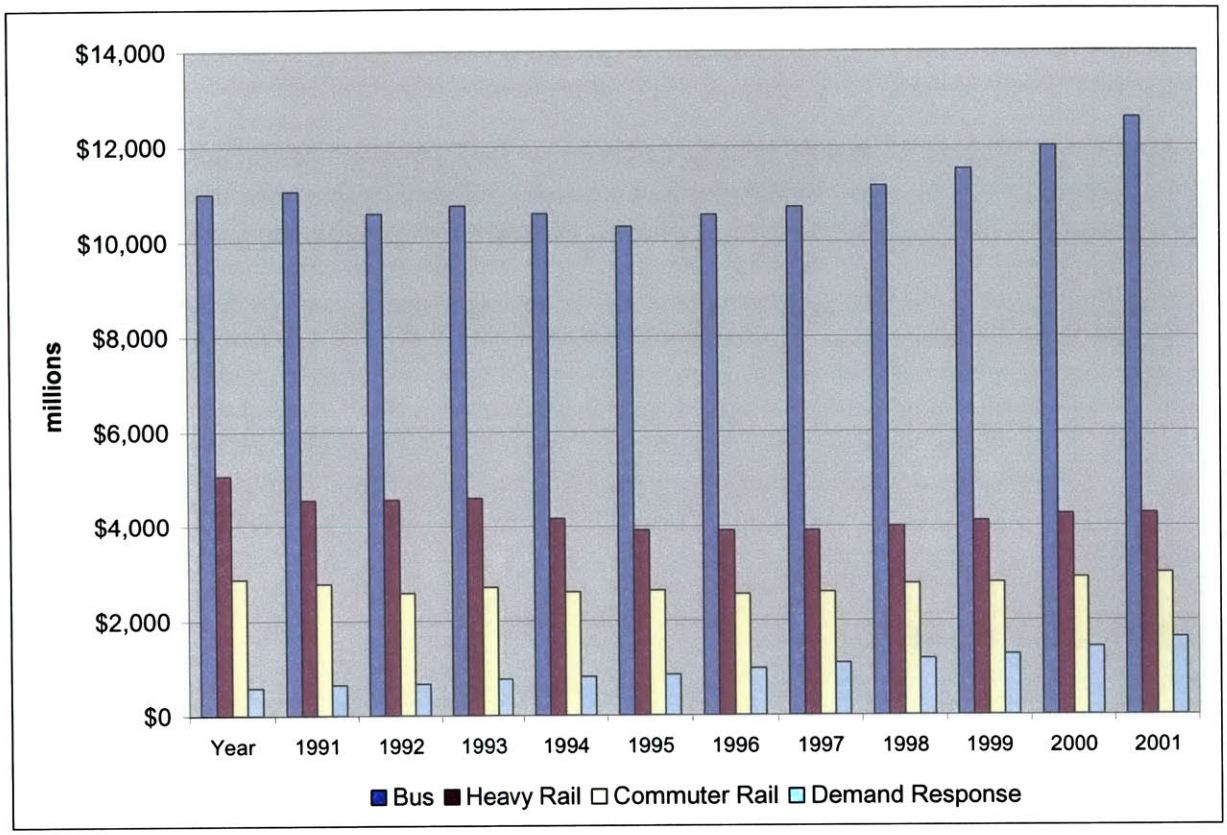
## Spatial Patterns – Lost Efficiency

Change in the spatial layout of cities is one primary reason why transit expenditures are increasing over time. As cities spread out and become less dense, more people rely on private automobiles and demand for transit decreases. Despite declining demand, there is political pressure to provide increased mobility to captive riders. This often requires that transit providers expand their service into low density areas and to maintain poorly performing routes despite cost concerns. This translates into lower load factors and higher costs per passenger. The increased congestion associated with urban sprawl also has a negative impact on some transit modes. Roadway congestion increases bus running times, which translates into increased operating costs. And, because people shift from transit to automobiles as bus travel times increase, congestion also further erodes demand. With the exception of light rail that operates in the automobile right-of-way, rail services are typically isolated from the impacts of automobile congestion.

## Labor and Fuel

In additional to efficiency losses, a second pressure on transit operations is the rise in the real cost of providing service. Wages and benefits are collectively negotiated and represent the largest single expense for transit operations. Labor-related expenses, including salaries and wages, fringe benefits, and services represented over 80 percent of transit operations expenses nationwide in 2001 (American Public Transportation Association, 2003). Similar to other industries that rely on domestic labor (e.g., nursing), transit labor has negotiated relatively high wages over time. While compensation may very significantly between regions, in 2001 the national average compensation for a transit employee was $44,100. This figure includes salaries and fringe benefits. The most radical salary inflation occurred during the 1970s, when demand was at its lowest and federal operating subsidies were plentiful. In the 1990s, salaries were more stable, but some modes did experience increased expenditures. As Figure 2-1 indicates, bus and paratransit total expenditures rose in the 1990s, while heavy rail expenditures declined and commuter rail expenditures stabilized (American Public Transportation Association, 2003). At the Chicago Transit Authority, healthcare costs have increased at a rate five times faster than inflation over the last five years (Chicago Transit Authority, 2003). It is likely that other agencies are also struggling with rising health care costs. While small relative to labor, fuel is another expense on the rise. Transit agencies have little control over fuel expenditures as costs are triggered by international political conflicts over fossil fuels. Environmental objectives, which lead an agency to switch from highly polluting to cleaner fuels, also increase the cost of fuel and can increase the cost and complexity of engine maintenance.

***Figure 2-1. National Trends in Total Operating Expenditures (in 2001 dollars)***



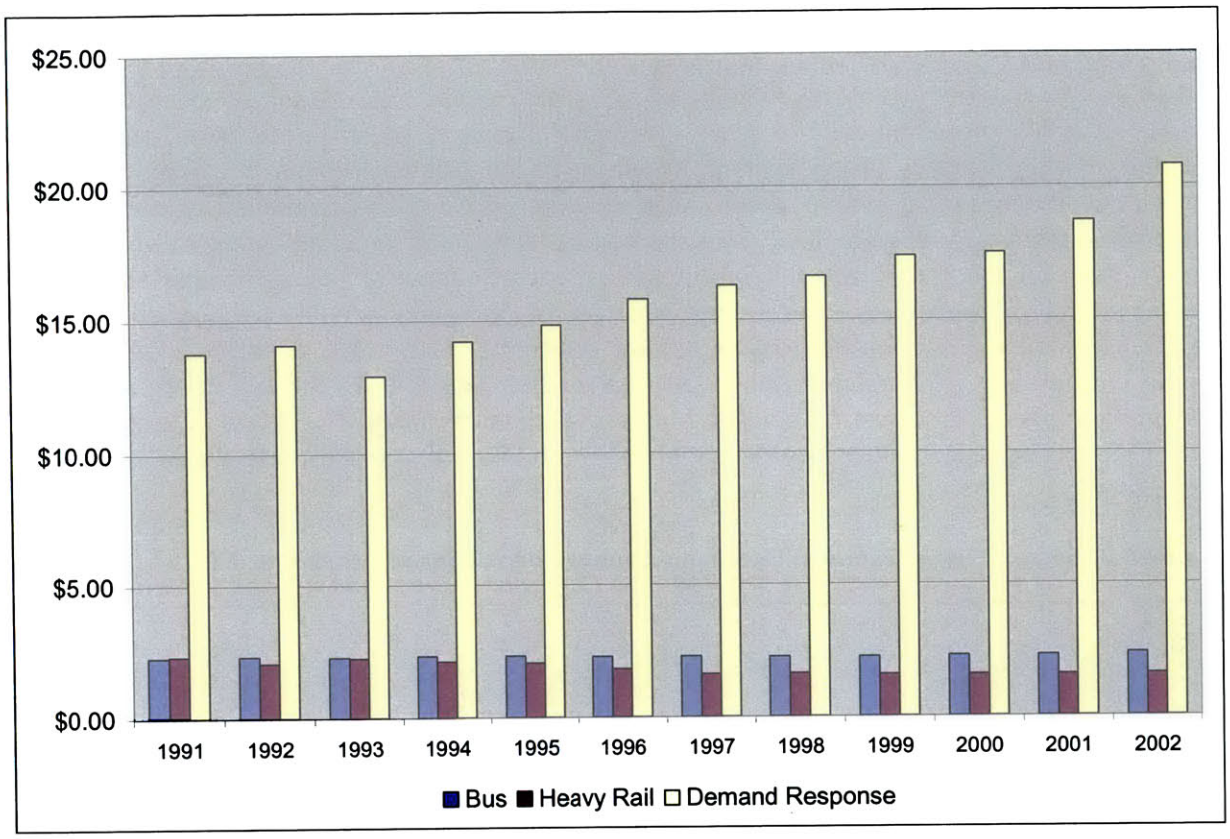

Source: National Transit Database, 2004.

## Paratransit

Several federal mandates have contributed to the increasing cost of providing transit service over time. The most significant mandate is the Americans with Disabilities Act of 1990. Under this law, transit agencies must provide an "accessible and equivalent" service for people who cannot use the fixed route service. This often takes the form of paratransit, which is a demand responsive service provided by transit agencies or contracted out to private providers. Other federal mandates that impact transportation costs are the Clean Air Act Amendments of 1990 and the Buy American Act of 1982 (Price Waterhouse, Multisystems, Mundle & Associates, 1998a). While paratransit is a worthy and needed service, it is extremely expensive to provide on a per trip basis relative to traditional fixed route service (see Figure 2-2). In 2001, the operating expense per unlinked passenger trip for paratransit was $18.86, compared with $2.40 for bus and $1.59 for rail (American Transportation Association, 2003).[3] Furthermore, the demand for paratransit service is increasing much faster than the demand for other more cost-effective transit modes.

[3] The National Transit Database reports statistics for demand responsive service, the majority of which is provided as paratransit.

***Figure 2-2. U.S. Trends in Operating Expenses per Unlinked Passenger Trip (in 2002 dollars)***




Source: National Transit Database, 2004.

Paratransit is currently considered a requirement of transit agencies that provide fixed route service. Commuter rail is exempt from this requirement. While some communities have chosen to expand paratransit services beyond the narrow definition of the ADA, many have not. The Americans with Disabilities Act does not require communities to provide additional transit service beyond the requirement triggered by the fixed route system. This is because the ADA does not require new programs, it only requires that current programs be made accessible to people with disabilities. This places a disproportionate responsibility of accessible transportation on the transit system. Both transit and people with disabilities would be better served if communities took a more holistic view of paratransit and provided service throughout the community to people with disabilities. This would require identifying additional funding streams and considering paratransit needs as broader than just a transit substitute.

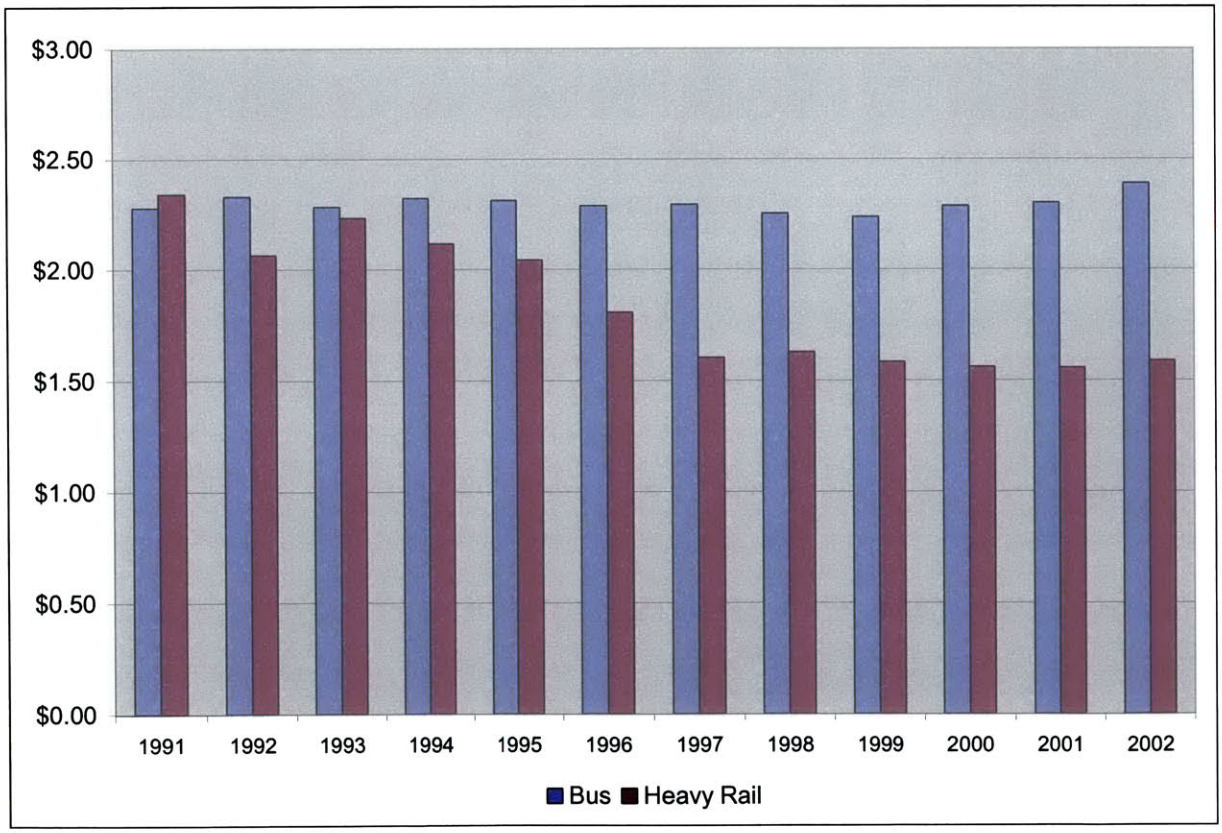
## Productivity Gains

Identifying opportunities to save money through true efficiency gains is one of the most effective ways for transit agencies to address the increasing cost of providing transit services. The key is to identify efficiency gains that save the agency money without compromising service levels and ridership. Providing signal preemption for buses is an example of this type of service gain. Customers benefit from increased reliability, while the agencies benefit from lower operating

costs realized through shorter running times. Some productivity improvements have a neutral impact on service, but represent cost savings for the agency. For example, in 1997 the Chicago Transit Authority cut costs by introducing technology that allowed the agency to operate the trains using one rail operator, rather than two.

Transit agencies should be wary of cost savings that appear to be efficiency gains, but actually hurt the long-term vitality of the system. These so-called efficiency gains are often disguised service cuts that lead to ridership losses. An agency may cut a route completely, or slowly erode customer satisfaction through less frequent service and more crowded vehicles. Non-radial modes, such as bus and paratransit, are most vulnerable to service cuts, as are services to low density and off-peak markets. This is often because the operating expense per passenger trip is higher for peak rail service than other market segments. Figure 2-3 compares the national trends in operating expense per passenger trip for bus and rail. As the graph shows, rail is becoming more efficient over time, while bus efficiency is declining. This trend is likely caused by increased roadway congestion and other urban changes that disproportionately impact the bus system.

***Figure 2-3. Bus vs. Rail – Trends in Operating Expense per Unlinked Passenger Trip***




Source: National Transit Database, 2004.

## 2.3 Increasing Agency Revenue

The largest portion of agency generated revenue comes from passenger fares; however, less than half of the total operating expense is typically covered from this source. In 2001 35.2 percent of operating funding (both revenue and subsidy) came from fares nationally (American Public Transportation Association, 2003). Minor sources of agency income include advertising and parking lot revenues. Transit agencies have been looking to these revenue streams to increase revenues; however, non-fare sources represent a relatively small source of income for public transit agencies in the United States. Transit agencies often have a limited charter that prevents them from engaging in activities, such as real estate development, that could cross-subsidize transit service. Furthermore, the special expertise required and the high risk associated with these parallel activities make these efforts difficult.

Fare revenue is primarily determined by transit demand, which is largely outside the control of the agency. The agency can have some positive impact on demand if it improves service levels or reduces fares; however, since demand is inelastic with respect to both service and fares, these techniques often end up costing an agency more than they generate in increased ridership.[4] When calculating passenger revenues, it is important to consider average fares, since many transit riders do not pay the full base fare when they travel. This is because pass programs and free transfers reduce the revenue per trip. The following section evaluates some of the challenges associated with maximizing agency revenue including several of the drawbacks to increasing transit fares and cutting service.

### Spatial Patterns – Declining Demand

The greatest shock to passenger revenues occurred between 1946 and 1972, when passenger demand nationally declined from 23.4 billion trips per year to only 6.3 billion trips (American Public Transportation Association, 2003). Even with the mild recovery over the past 30 years, passenger trips are still less than half of what they were in the 1940s. Changing spatial patterns can be blamed for part of this negative trend. Over the past 50 years, income levels in this country have increased and automobiles have become cheaper and more readily available. Increased motorization has fueled sprawling real estate development patterns, further eroding transit demand. In his analyses of the exogenous causes of declining demand, Ian Savage uses "the ratio of jobs in Chicago to total jobs in Cook County" as a proxy for a variety of spatial factors that have been unfavorable to transit including (Savage, 2004):

- Suburbanization of residential locations;
- Decline in urban jobs;
- Lack of job/housing balance;
- Reverse commuting to low-density areas; and

[4] Peak rail trips tend to be the most inelastic, because people have few choices about when and how to get to work. Off-peak bus trips are the most elastic because these trips tend to be optional.

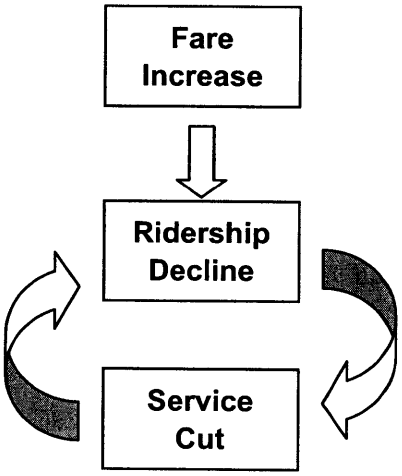
- Increased motorization among urban residents.

For the most part, these variables are outside of a transit agency's control. In regions with progressive growth management policies, such as Portland, Oregon, the transit agency can have some influence because complimentary transportation and land use decisions are prioritized.

## Increasing Fares and Decreasing Service

Fare increases and service cuts have also contributed to lost ridership. Because transit demand is inelastic these techniques will raise revenues in the short run; however, over time these practices erode ridership thus initiating a vicious cycle between ridership and service (see Figure 2-4). Depending on the political circumstances, agencies may focus on service cuts, fare increases, or both. Agencies are driven to these decisions by incentives to control costs and limits on available subsidy over time. While fare raises can generate negative press, they are often politically easier than service cuts because the negative impacts are spread over the entire system, rather than being isolated to a single route. Alternatively, service cuts tend to create very concentrated losers, which makes them politically challenging. In his analysis of transit in Chicago, Ian Savage recognizes this tendency and concludes that given a budget constraint the CTA could have done a better job of maximizing social welfare had they been more willing to cut service, rather than relying on fare increases to control their operating deficit (Savage, 2004).

***Figure 2-4. Fare Increases can Trigger Vicious Cycle of Ridership Decline***




Low-income users who do not have access to an automobile are typically the most inelastic riders on the system. The most elastic riders are upper income people with the highest value of time and the greatest number of transportation alternatives. The irony is that the people who can afford to pay the most are the people least likely to endure a fare increase or a service cut. Therefore, these techniques have the tendency to shift choice riders to private automobiles, while forcing captive riders to pay the increased fare and bear the burden of the service cuts the transit system puts in place as a result of the decreased ridership.

### Automobile Externalities

Raising fares may increase revenue in the short-term. However, over time this technique compromises transit's ability to compete with the private vehicle and offset the negative externalities associated with automobile travel, including congestion and pollution. Automobile drivers do not pay for the congestion externality that they impose on other drivers and on the bus system. This mispricing forces transit agencies to implement "second-best" pricing if they want to compete with the automobile, which is the dominant transportation mode. The automobile also has an advantage over transit because people perceive the automobile as a sunk cost. The marginal cost of using their car after they have purchased it and paid for insurance is relatively small. Alternatively, most transit users pay for their service as they go. This makes the marginal cost of an additional ride relatively high.

Fare mechanisms, such as university passes and monthly passes have helped to address this issue; however, the majority of transit riders in most US cities still pay for transit on a per trip basis. Pass programs can increase peak period transit congestion, forcing agencies to consider increasing peak service, which is more expensive than off peak service. The increased demand is created because people take additional short trips that they would not take if they had to pay per trip. New York City is currently grappling with this phenomenon as a result of its recent introduction of pass programs between rail and bus. Additional research is needed to determine if the ridership benefits of the pass programs outweigh the increased costs. However, even if the socio-economic benefits outweigh the costs, an agency with limited subsidy may not be able to increase peak capacity.

## 2.4 Increasing Public Subsidy

The difference between operating costs and fare revenues is often referred to as the operating deficit or net-operating expenditure. Operating deficits have increased dramatically over time as a result of increasing costs and decreasing ridership. As a result, transit agencies have become increasingly dependent on federal, state, regional, and local subsidies.

### Challenges to Regional Funding

From 1976 to 1998, transit agencies benefited from federal operating subsidies to offset increasing operating deficits. However, from 1989 to 1994, only one third of large and medium agencies saw their federal operating funds increase and all of these increases lagged behind inflation (Price Waterhouse, Multisystems, Mundle & Associates, 1998a). By 1998, with the passage of TEA-21, the federal government ceased providing transit operations funding to large and medium sized properties, such as the CTA.

To compensate for increased service costs and shrinking federal operating dollars, many regions identified dedicated funding sources, such as regional sales taxes, to keep their systems running. According to a 1998 transit report, "dedicated funding for operations has become the fastest growing component of operating funding," increasing by more than one-half from 1989 to 1994 (Price Waterhouse, Multisystems, Mundle & Associates, 1998a). In the

Chicago region, transit operations are supported by a regional sales tax, which actually predates the decline in federal operating dollars. Dedicated funding encourages agencies to engage in long term planning because they have a better ability to project future resources. When transit systems have to rely on non-dedicated funding steams, such as the state general fund, planning can be more difficult because transit has to compete with other pressing needs, such as education and health care. Under this scenario, transit funding is less predictable and often fluctuates annually.[5]

Implementing or modifying a regional subsidy can be quite challenging because transit has concrete costs, but more subtle benefits. The regional benefits of transit include access and mobility for those who cannot or do not choose to drive, congestion mitigation, economic vitality, and to lesser extent, pollution mitigation. While these are noble benefits, they are often overlooked by suburban voters and decision makers. Typically the suburbs do not want to pay for transit, unless they perceive a direct benefit. This often forces the region to direct resources to low-density areas, even though transit is most competitive in dense urban corridors.

Maximizing regional benefits often means allocating resources based on performance measures, rather than political boundaries. This can create tensions, because everyone who pays expects to receive service. Having multiple service providers can add to regional tensions, because transit agencies must compete for a limited set of resources. While this encourages agencies to be cost effective, it can also subvert cooperative efforts to increase regional benefits. The San Francisco Bay Area represents the extreme example with over two dozen service providers, but even Chicagoland experiences these challenges with three separate service providers.

## The Politics of Subsidy

Increasing the public subsidy typically requires an act of the legislature or in some cases a voter referendum, making all funding mechanisms inherently political. Financing transit through public subsidy forces a balance between service goals and political constraints. In order to obtain enough support for the funding stream, agency staff and legislators often have to make concessions that ultimately impact the level and type of service provided. For example, the 1983 RTA Amendments in Chicago introduced a statutory fare recovery ratio in the region, which reinforces the constraint on funding and prevented the service providers from off-setting ridership losses with lower fares and/or increased service. On a local level, politicians often refuse to support fare increases unless the agency commits to service improvements. While the agency depends on political support, in the long run the service increases may offset the revenue increases of the fare raise.

[5] The MBTA in Boston operated quite successfully for many years with a non-dedicated funding source. The board would approve their annual budget and the legislature would pay the bill at the end of the fiscal cycle. This system would have been less successful if the legislature had to approve the budget in advance, rather than retroactively.

In many instances, political objectives, rather than planning objectives, dictate how much subsidy is available and how it is allocated. In an ideal world, politicians would base subsidy decisions on transit goals, such as providing a viable alternative to automobile congestion or serving captive riders. While transit goals indirectly benefit from increased subsidy, politicians rarely tie funding to performance measures. If performance measures are discussed, the conversation tends to focus on measures that indicate success, but do not directly tie to the goals of transit. For example, the Regional Transportation Authority in Chicagoland often focuses attention on their capital program and their high bond rating, which deflects attention away from negative ridership trends.

Additional challenges arise because new funding mandates are typically designed to solve the problem of the moment. Most governments take a static approach to funding transit and do not understand or plan to increase subsidy levels over time in response to increasing transit expenditures or ridership growth. In addition, new funding mechanisms are often put into place to respond to a specific crisis. Oftentimes, these mandates are not malleable enough to respond to changes over time. Furthermore, these funding mandates do not reflect the diverse set of goals that the transit agency is charged with pursuing. For example, the Pace suburban bus system in Chicagoland must recover 40 percent of its operating costs, which is relatively high for a suburban bus service. As a result, it focuses on providing peak service, while offering reduced off-peak service to captive riders.

The structure of most dedicated funding streams also contributes to the trend towards increasing costs. In many instances, the initial resources generated from a dedicated funding stream are designed to anticipate future requirements, but exceed the immediate needs of the transit agency. This creates problems because a broad range of stakeholders from labor to politicians to community groups all want a piece of the increased subsidy. Transit management may find it difficult to say no when the money appears readily available. However, this short-sighted planning will inevitably create problems in the future, forcing the agency to return to the legislature and/or cut service.

## The Economics of Subsidy

Beginning in the 1970s, many economists started questioning the economic value of operations subsidies, fearing that these resources were being usurped by labor rather than being used for service improvements. Such research was a response to escalating operating expenditures that coincided with the first large-scale federal operating subsidies. In many studies economists confirmed that increased labor cost consumed the largest portion of the increased funding. However, other stakeholders also played a role. In a recent book focused on economically efficient urban transportation, Brookings Institution economists Clifford Winston and Chad Shirley suggest that "government subsidies, the influence of various transportation constituencies, and institutional decision structures that allow public officials to pursue objectives inconsistent with economic efficiency account for most of the deviation from an efficient policy" (Winston and Shirley, 1998). In some instances, it is appropriate for decision makers to deviate from economic efficiency to achieve other goals of transit. The real problem occurs when a transit agency experiences increasing expenditures without a corollary benefit to the end user.

Don Pickrell wrote a formative article in 1985 that looked at this issue in the United States at an aggregate level. Pickrell determined that "rapidly rising expenses per unit of output, expanded service levels, and reduction and simplification of fares" absorbed the majority of transit subsidies. Twelve years later, Ian Savage built on Pickrell's model to specifically investigate Chicagoland. As part of this analysis, he conducted a time series analysis from 1948 to 1997 for the Chicago Transit Authority. To isolate the various factors at play Savage separately evaluates exogenous and endogenous decision variables. The impact that the suburbanization of jobs has had on transit demand is an example of an exogenous decision variable (beyond the agency's control), whereas fares and service levels are typically endogenous (within the control of the agency). Savage uses this framework to determine that the CTA has been able to cut its annual deficit in half through productivity gains, fare increases and service cuts. Had the CTA not made these changes, the annual deficit would be approximately $1 billion dollars. With the changes, the annual deficit is about $550 million. Savage also concludes that the CTA could have closed the gap even further if a significant portion of the transit subsidy had not been diverted to organized labor in the 1970s. Additionally, Savage concludes that the CTA could have further controlled costs had it been willing to cut more service, in response to reduced demand for transit (Savage, 2004).[6]

## Evaluation of Traditional Revenue Streams

All public subsidies are supported by taxes or user fees. The three most common transit funding sources are: property taxes, gas taxes and sales taxes. The following section evaluates these traditional funding streams using an analysis framework developed by Shelby Chodos at the Harvard Kennedy School of Government. Table 2-1 summarizes each revenue stream using the Kennedy School framework. A rating of "High" indicates that the revenue stream largely meets the criterion, while a rating of "Low" indicates that for the most part the revenue stream does not meet the criterion. The following sections consider each revenue stream in detail.

### *Analysis Framework: The Four E's*

The following framework considers the fiscal aspects of each of three traditional revenue streams. The framework presented below is a simplified version of the Funding Evaluation Framework presented in Chapter 1 and used in Chapter 5. All four E's are incorporated into that analysis tool.

[6] During this analysis, Savage focused on welfare maximization, but does not address the fact that cutting service would have further worsened the loss in ridership.

- **Equity.**
  - Vertical *equity.* To what degree do individuals with larger tax bases pay a higher rate than individuals with smaller tax bases? In other words, is the tax progressive, proportional, or regressive?
  - Horizontal *equity.* To what degree are individuals in equivalent, relevant circumstances treated equally?
  - *Beneficiary principle.* To what degree are the costs distributed to those who benefit from the services?
- **Efficiency.** What is the relative cost of collecting and administering the tax? To what degree does the tax distort individuals' behavior? To what degree does the tax present consumers with the true cost of supplying transit?
- **Effectiveness.** To what degree does the tax generate a sufficient sum of money to address the agency's short- and long-term funding needs?
- **Exportability.** To what degree is the tax paid for by individuals who live outside of the bureaucratic district levying the tax?

Source: Petersen & Strachota, 1991.

***Table 2-1. Analysis of Traditional Revenue Streams***

| | Property Tax | General Sales Tax | Gasoline Sales Tax |
|---|---|---|---|
| Vertical Equity | High - tax is relatively progressive | Low - tax is regressive | Medium – regressive for low-income drivers, but people without cars pay nothing and households with multiple cars pay more |
| Horizontal Equity | Medium - only horizontally equitable if assessments are current | High - if applied evenly throughout the entire region | Medium – payment varies based on how much/if a person drives |
| Beneficiary Principle | Low - transit's impacts on land values are localized, not regional | Low - no direct connection between regional consumption and transit | Medium - transit is part of transport system and can reduce vehicle congestion |
| Efficiency | Low - sends no demand signals, highly visible to home-owners, state does not currently administer, high administration costs | Medium - sends no demand signals, but relatively low cost to administer | High - least visible to consumers, has the potential to send demand signals to drivers |
| Effectiveness | High - most stable of the four taxes | Medium - fluctuate with business cycle | Low - unless indexed, this tax will erode with inflation |
| Exportability | Low - only people in the region pay | Medium - captures tourist dollars | Medium – may capture through traffic dollars |

## *Property Tax*

Property taxes represent the largest internal source of municipal tax revenue. The largest portion of municipal property tax is typically spent on the public school system, but municipal taxes also pay for many other local services including transit, and police and fire departments. . A municipality may elect to earmark a portion of their local property taxes to transit or they may choose to fund transit indirectly through their general fund. In the 1980s suburban towns in SEPTA, the Philadelphia transit system, dedicated a portion of their property tax revenue to transit. Alternatively, the towns that make up the MBTA in Greater Boston use property taxes to pay a weighted assessment based on their population and proximity to the heart of the system.

The fairness of the property tax varies depending on how you define equity. Property taxes are progressive, which means that wealthier people tend to pay a greater portion of their income than poorer people. This is consistent with the equity goal of transit, which attempts to provide access to people who cannot operate or afford an automobile. In theory, municipal property tax system demonstrated horizontal equity in that two individuals living in identical houses will pay the same amount in tax. However, in many municipalities the property assessment procedure can be haphazard and inconsistent, and people who live next door to one another in similar houses can often pay vastly different annual taxes.[7]

A property tax for transit cannot be construed as a user fee because there are people who pay the tax yet do not enjoy a direct benefit from the transit system. While the quality of the transit system may influence local property values, a neighborhood with high property values because of their proximity to a rail station will not pay a greater percentage of the tax than a comparable high-income neighborhood without a rail system. Tax increment financing,[8] does attempt to capture the localized benefits of transit to fund capital projects; however, this technique is not typically used for operations.

Property taxes offer the potential for suburban residents to cross-subsidize urban residents. However, they are costly to administer and highly visible to home-owners who typically pay the property tax in bi-annual payments. It is not exportable to people outside of the jurisdiction. The property tax represents the most stable of the three traditional revenue streams because it tends to lag behind the business cycle.

### *Sales Tax*

Over the last thirty years, dedicated sales taxes have become popular funding tools for transit operations. Chicagoland implemented a regional sales tax in 1979; the Atlanta region implemented a similar tax in 1971. A more recent example is the MBTA in Boston, which began receiving dedicated sales tax revenue in 2000. Sales taxes are considered regressive because low income people pay a larger percent of their household income than wealthier people. To help equalize the impact of the sales tax, jurisdictions will often exclude certain goods, such as food and medicine. Another disadvantage/drawback of using a sales tax to fund transit is that there is no direct connection between regional sales and transit. This can be problematic because sales tax revenue fluctuations are isolated from the transportation needs of the region. If applied evenly across a region, a sales tax can have a high degree of horizontal equity. This is the case for the METRO in Houston where everyone in the service area pays a 1 percent sales tax. In Chicago, the collar counties pay less than Cook County, which compromises horizontal equity.

[7] The property tax is the only tax that requires the administrator to assess the value of the product.

[8] Tax increment financing is "the dedication of incremental increases in real estate taxes to repay an original investment in improved public facilities that created increased real estate values" (TCRP Report 89)

The sales tax is slightly more efficient than the property tax for funding transit. It does not send demand signals to transit consumers, but it is relatively low cost for the government to administer. Unlike the property tax, individual businesses pay the majority of the compliance costs. Sales taxes are effective, because they generate a lot of money for transit and are not very visible to the consumer. Even a quarter percent increase can represent hundreds of millions of dollars in a large region. Unlike property taxes, sales taxes compound the negative impacts of a recession. During bad economic times passenger revenues and sales tax revenues both decline, forcing transit agencies to contract services. Alternatively during economic booms, both fare and sales tax revenues increase dramatically, which may cause transit managers to over-commit resources to special interest groups, such as labor. In communities with significant tourism, a sales tax can be exported to visitors. Some communities increase the sales tax on tourist services, such as hotels and rental cars. An automobile excise tax is a sales tax specifically directed to automobiles. Many regions have excise taxes; however, the revenue typically funds city services, rather than transit operations.

### *Gas Tax*

A gasoline tax can be a flat tax per gallon or a percentage of the total gasoline purchase. Flat taxes are most common because they mirror the federal gas tax. Unless they are indexed to inflation, flat gasoline taxes lose their effectiveness over time. When a gas tax is used for transit, automobile drivers subsidize transit riders. Many transit experts think this is a valuable cross-subsidy because it attempts to compensate for the negative externalities that automobile drivers impose on the transit system. In a recent international article on transit operations, this strategy was identified as "polluter pays: those who cause a problem compensate for the cost imposed on the community" (Union International des Transports Publics, 2003). The vertical equity of a gas tax is complicated. While the tax is regressive, people who cannot afford cars or chose not to own a car pay nothing. Furthermore, "this regressivity is modest because gasoline expenditures are a relatively modest share of total consumer expenditures, even in the lowest income brackets" (Nivola & Crandall, 1995). If applied regionally, a gas tax exhibits horizontal equity because people with similar preferences pay the same.

Of all traditional funding sources, the gas tax is most closely tied to the beneficiary principle. The transportation system should be considered an integrated system. Bus riders benefit from a strong roadway network and automobile drivers benefit from the reduced congestion from people using a transit alternative. Raising the gasoline tax can be challenging because people tend to view driving as a basic right that they should not have to pay for; however, once set, the gasoline tax is relatively invisible to the consumer because it is included in the price per gallon. Furthermore, the gasoline tax can send demand signals to drivers, who otherwise view transportation as a sunk cost. In some states, the gasoline tax is earmarked for roadway improvements. Dedicating the revenue solely to the auto-highway system eliminates the ability to correct for automobile externalities. For this reason, many states have expanded their earmarking program to include transit. While not highly exportable, localities with significant through traffic may benefit from outside revenue.

## Relevant Trends in Transit Capital Finance

Transportation capital projects may also draw from dedicated funding streams, such as sales and gasoline taxes. These revenue sources may be used on a pay as-you-go basis or they may be used to back revenue bonds. These funding sources share the same advantages and disadvantages discussed in the previous section.

The literature did not reveal innovative finance tools that are easily adapted to operations. This is because the majority of recent capital advances relate to debt financing, which transfers the cost of a project to future generations. Debt financing for capital projects is justifiable because future generations will enjoy the benefits of today's investments. For example, a new rail line will be used for decades to come. Conversely, transit operations resources are consumed annually. It would be irresponsible to charge future generations for the services we consume today.

While the exact mechanisms of capital finance do not translate to operations funding, some of the principles do relate. For example transportation capital projects typically do a better job of leveraging federal and state resources. Two examples of state programs that encourage local investments are:

- **State Infrastructure Banks.** "A state or multi-state revolving fund that provides loans, credit enhancements, and other forms of financial assistance to transportation projects" (TransTech Management & PA Consulting)
- **Transportation Infrastructure Finance and Innovation Act.** "A federal transportation credit program... that provides direct federal loans, lines of credit, and loan guarantees" (TransTech Management & PA Consulting).

A similar program could be envisioned for transit operations. For example, a state might agree to match local operations dollars or the federal government could provide operating funds in recessions to smooth out the impact of the economic cycle. Alternatively, transit agencies might benefit from a return to federal operations subsidies.

A third strategy focuses on capturing the benefits of transit and diverting them back to the system. In capital projects, this is known as tax increment financing, defined as "the dedication of incremental increases in real estate taxes to repay an original investment in improved public facilities that created increased real estate values" (TransTech Management & PA Consulting). This funding source is "premised on the expectation that property values (and thus, property tax revenues) will increase as a result of a specific investment or improvement" (TransTech Management & PA Consulting). While tax increment financing has not traditionally been used for transit operations, an argument could be made that the cost of maintaining new services should be borne in part by the businesses that benefit from the services.

Impact fees are a final example of capital funding techniques that could inform operations funding. They are typically charged to private developers to compensate for the new capacity requirements their projects impose on public infrastructure. This theory could also be used to fund transit operations. For example, if a parking lot diverts 100 trips per day from public transit to the private automobile, the lot owner could be charged an annual impact fee that seeks to offset the loss in public transit ridership.

# 3. CHICAGOLAND CASE STUDY

This chapter presents the current organizational and funding structure of transit in Chicagoland by investigating the umbrella organization and its three service providers in order provide an understanding of how the issues of revenue, cost, and subsidy presented in Chapter 2 play out at the metropolitan level. The Regional Transportation Authority (RTA) is an administrative agency that oversees three service agencies providing transportation services to the greater Chicago region: the Chicago Transit Authority (CTA), Pace Suburban Bus Division (Pace), and the Northeast Illinois Regional. Commuter Railroad Corporation (Metra). This chapter also identifies regional policies and practices that negatively impact the Chicago Transit Authority. The first section investigates the organizational structure of RTA. Section 2 explains the regional funding structure. Section 3 evaluates the past performance of the RTA, and Section 4 discusses allocation mechanisms that improve on the current system. The last section discusses a recent initiative by the state legislature to examine the structure of regional transportation in Chicagoland. While some of the nuances of this case study are specific to Chicagoland, most of the challenges will translate well to issues and challenges faced by other regions with large transit systems.

## 3.1 ORGANIZATIONAL STRUCTURE OF REGIONAL TRANSIT

The Chicago Metropolitan Area consists of six counties in northeastern Illinois: Cook, DuPage, Kane, Lake, McHenry, and Will (see Figure 3-1). The City of Chicago is the largest municipality and is contained within Cook County. According to the 2000 census, the City of Chicago consisted of 2,896,016 residents, which contributed to Cook County's overall population of 5,350,269 (U.S. Census Bureau, 2000). The second largest county, by population, is DuPage with less than 1 million residents (Table 3-1).

***Figure 3-1. The Six County Metropolitan Area***

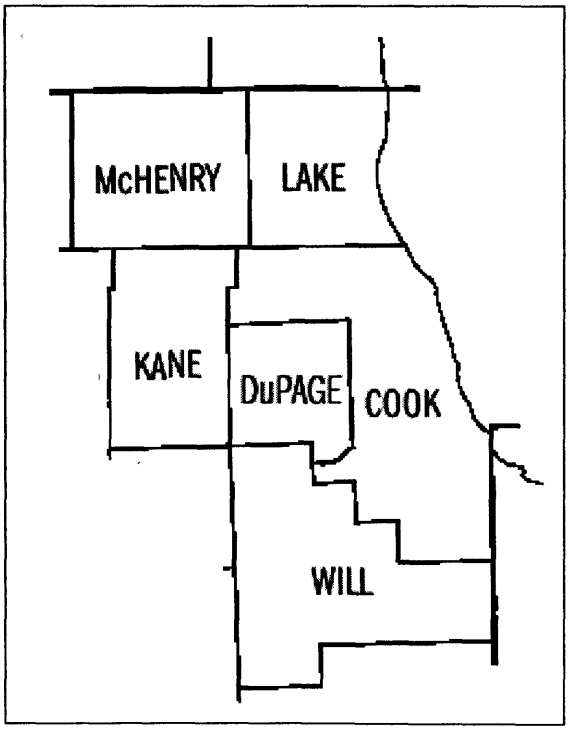


***Table 3-1. 1999 County Statistics for the Chicago Metropolitan Region (in 1999 dollars)***

| County | Population | Pop. Density (pop/mi2) | Per Capita Income |
|---|---|---|---|
| Cook County (includes Chicago) | 5,350,269 | 5685.6 | $23,227 |
| DuPage County | 904,161 | 2710.3 | $31,315 |
| Lake County | 644,356 | 1439.7 | $32,102 |
| Will County | 502,266 | 600.1 | $24,613 |
| Kane County | 404,119 | 776.5 | $24,315 |
| McHenry County | 260,077 | 430.9 | $26,476 |

Note: Population density over the entire county is not a proxy for population density in the urbanized areas.

Source: US Census Bureau, 2000.

Chicagoland boasts an impressive transit system, including urban rail and bus, suburban bus and an extensive commuter rail system. The regional transportation system is coordinated by the Regional Transportation Authority (RTA), which was established in 1974 through a referendum administered throughout the six-county region. The RTA oversees the second largest transit system in the United States, with unlinked passenger trips totaling more than 571 million in 2001 (Regional Transportation Authority, 2001). In gross numbers, the RTA Act passed by a narrow margin. The totals for the region were 50.6 percent in favor and 49.4 percent opposed (Allen, 1996). However, a deeper analysis reveals that the City of Chicago and the suburbs viewed the referendum very differently. Seventy-one percent of the City of Chicago voted in favor of the referendum, compared with 34 percent in the suburbs. When it was first formed, the regional organization directly produced suburban transit service and allocated resources to the urban transit provider, the Chicago Transit Authority (CTA). However, in 1983, the state legislature radically restructured the RTA in response to a fiscal crisis. The 1983 Amendment to the RTA Act prohibited the RTA from directly providing transit service in an effort to separate fiscal control and service provision. It also established a regional cost recovery ratio of 50 percent and officially recognized the following three service providers:

- **Chicago Transit Authority (CTA).** Provides bus and heavy rail service to the City of Chicago and parts of suburban Cook County. The rail system is primarily radial, terminating at the central business district, also known as the downtown loop. The bus system is designed as a grid with extensive cross-town service. CTA is the largest transit service provider in the region. On an average weekday, the CTA provides over 1.5 million unlinked trips. CTA's system includes approximately 1,900 buses that operate on 134 routes and 1,937 route miles. CTA also operates seven heavy rail routes with 143 stations and 222 miles of track (CTA Website, 2003).

- **Northeast Illinois Regional Commuter Railroad Corporation (Metra).** Provides commuter rail service between the suburban areas of the six-county region and the City of Chicago. The primary market is suburban residents working in the central business district (CBD); however the Metra system also includes non-CBD stops within the City's boundary. Metra operates 495-miles of rail and 228 stations. On a typical weekday, Metra provides 150,000 unlinked trips (Metra Website, 2003).
- **Pace Suburban Bus Division (Pace).** Provides suburban bus service, vanpool service and paratransit dial-up service in all six Chicagoland counties. Many of Pace's active bus routes feed the Metra and CTA rail systems. Pace is the smallest of the three service providers, with 248 fixed bus routes, 372 paratransit vehicles and 383 vanpools. On a typical weekday Pace provides 130,000 unlinked passenger trips (Pace Website, 2003).

Since 1983, RTA's primary role has been to oversee the budgetary process of the three service providers and to allocate capital and operating funds. The RTA also provides some planning services and represents transit's interests to the regional metropolitan planning organization, the Chicago Area Transportation Study (CATS). The RTA is also charged with coordinating fare integration within the region. Presently, CTA and Pace have an integrated fare media, but this does not include Metra. Transit advocates and CTA managers are critical of RTA's inability to accomplish this task.

While the three agencies provide some coordinated services, to Chicago residents they present themselves as three distinct organizations. Each agency has a separate board of directors to determine level of service, fares and operating policies. The 1983 Amendment established the three service boards so that the individual agencies could be more responsive to their own local constituents. However as a consequence, the service agencies are often in competition with one another for capital and operating resources, and cooperation and coordination is limited.

A board of directors also governs the Regional Transportation Authority. It's13-member board consists of:

- Five directors appointed by the Mayor of Chicago (the chairman of the CTA serves as one of the five directors);
- Four directors appointed by the suburban members of the Cook County Board;
- Two directors appointed by the Kane, Lake, McHenry and Will County Boards;
- One director appointed by the DuPage County Board;
- One director (also the Chairman of the Board) whose election requires confirmation by at least nine directors (Regional Transportation Authority, 2001).

Based on this formula approximately 60 percent of the board represents the suburbs and 40 percent represents the urban core. The Chair of the CTA board is represented, but the other two service boards are not. The Board structure is problematic because it is not well aligned with transit interests. The suburban board members are appointed by the counties, who have little vested stake in transit. While some of their constituents ride transit, the majority do not. In the

City of Chicago, transit plays a much more visible role in the political system, which makes the mayor a more appropriate person to make board appointments.

While the current board structure is problematic, it is likely to get worse. According to the RTA Act the General Assembly should review the composition of the board after each decennial census (Illinois Legislature, 1979). Based on the population changes recorded in the 2000 census, it is likely that the collar counties will gain a seat and the City will lose a seat, further shifting the political center of the RTA away from the majority of riders.

## 3.2 Funding Structure of Regional Transit

As indicated in the previous section, the RTA's primary function is to allocate capital and operations resources to the three service providers. The revenue sources that filter through RTA include: federal capital grants, Illinois First state capital grants, regional sales tax dollars, and public transportation funds.[9] The RTA Act also grants the RTA the power to issue debt for capital investments.[10]

### Historical Overview

The funding sources used today are different than the resources initially conceived for the region. The original RTA Act included a short-term bailout of the struggling Chicago Transit Authority and the following annual funding sources:

- 3/32$^{nd}$ of the state sales tax raised in the six-county region;
- $14 for every motor vehicle registered in the City of Chicago; and
- $5 million from Cook County and the City of Chicago.

The RTA Act also endowed the RTA with the power to enact two new taxes - a gasoline sales tax and an off-street commercial parking tax - if a supermajority of the board approved (Allen, 1996).

To avoid a financial crisis, the RTA Board used its taxing authority to establish a 5 percent gasoline tax in June 1977. The tax was agreed to for a 2-year term and was immediately despised by suburban residents (Allen, 1996). When the funding issue reemerged in 1979, the RTA proposed replacing the gas tax with a 1 percent regional sales tax. Had the legislature granted this request the RTA would have been better off than it was under the gas tax. Instead, the legislature agreed to have Chicago and suburban Cook County pay 1 percent, while the collar counties paid only ¼ percent. Furthermore, the state withdrew the existing state sales tax

[9] The public transportation funds come from the state legislature, which provides an additional 25-cent match for every dollar collected from the RTA sales tax. This money is allocated at RTA's discretion.

[10] In addition to the resources discussed here, the RTA also administers smaller funds, such as the reduced fare reimbursement, used to partially compensate the service providers for granting discount fares to youth, seniors and people with disabilities.

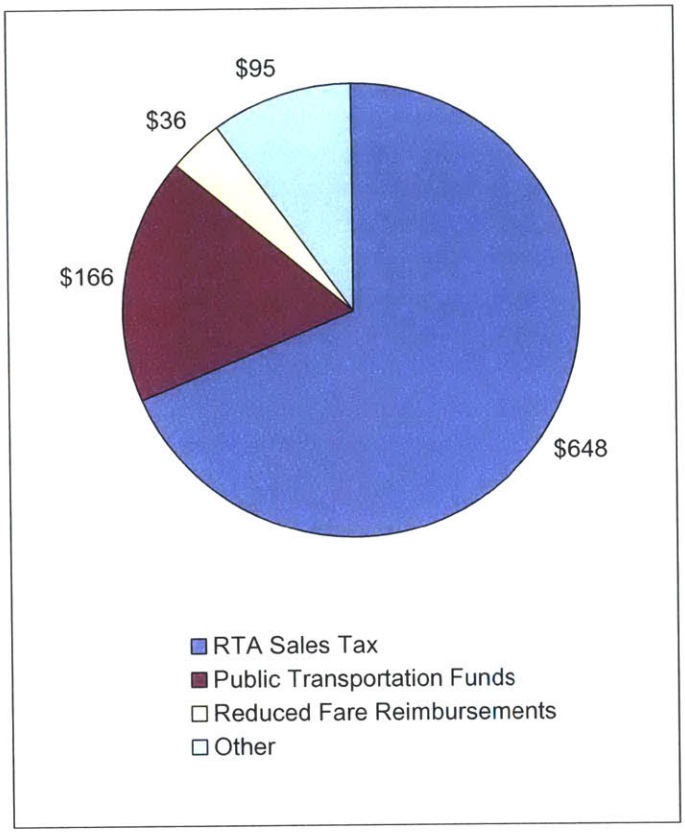
funding and the $14 motor vehicle registration fee (Allen, 1996). The state restored its support for transit in 1983, when it agreed to provide the public transportation funds. For a condensed version of the RTA funding timeline, refer to Table 3-2. The current funding levels are presented in Figure 3-2.

***Table 3-2. RTA Funding History***

| Year | Event | RTA Funding Sources Include |
|---|---|---|
| 1974 | RTA created | ▪ 3/32 of region's sales tax revenue<br>▪ $5 million from Cook County & City of Chicago<br>▪ $14 per vehicle registered in the City of Chicago<br>▪ RTA Board had right to levy a parking tax or a gas tax |
| 1977 | RTA Board votes for gas tax | ▪ In addition to above revenue streams, RTA levies a 5% gas tax on the region |
| 1979 | Gas tax expires; Legislature approves a regional sales tax | ▪ Cook pays 1%<br>▪ Collar counties pay ¼%<br>▪ State takes away 3/32 of region's sales tax and Chicago vehicle registration funds<br>▪ $5 million from Cook County & City of Chicago remains |
| 1983 | RTA Act Amendments | ▪ Current geographic formula established<br>▪ State agrees to pay Public Transportation Funds*<br>▪ RTA sales tax and $5 million from Cook/Chicago remain |
| 1990 | Sales Tax Reform Act | ▪ Cook residents continue to pay 1% on food and drugs<br>▪ Cook residents pay ¾% on all other retail sales and ¾% on items used, but not purchased, in region (Use Tax)<br>▪ Increased contribution from the state makes up for the reduced Cook County sales and use tax on retail sales other than food and drugs.<br>▪ Cook County effectively contributes more to the region's transit system because it does not receive ¼% sales tax received by collar and downstate counties.<br>▪ Collar counties continue to pay ¼%<br>▪ $5 million from Cook County & City of Chicago remains |

Note: The state did not begin paying the Public Transportation Funds until 1985.*

***Figure 3-2. Sources of RTA Revenue for 2002***

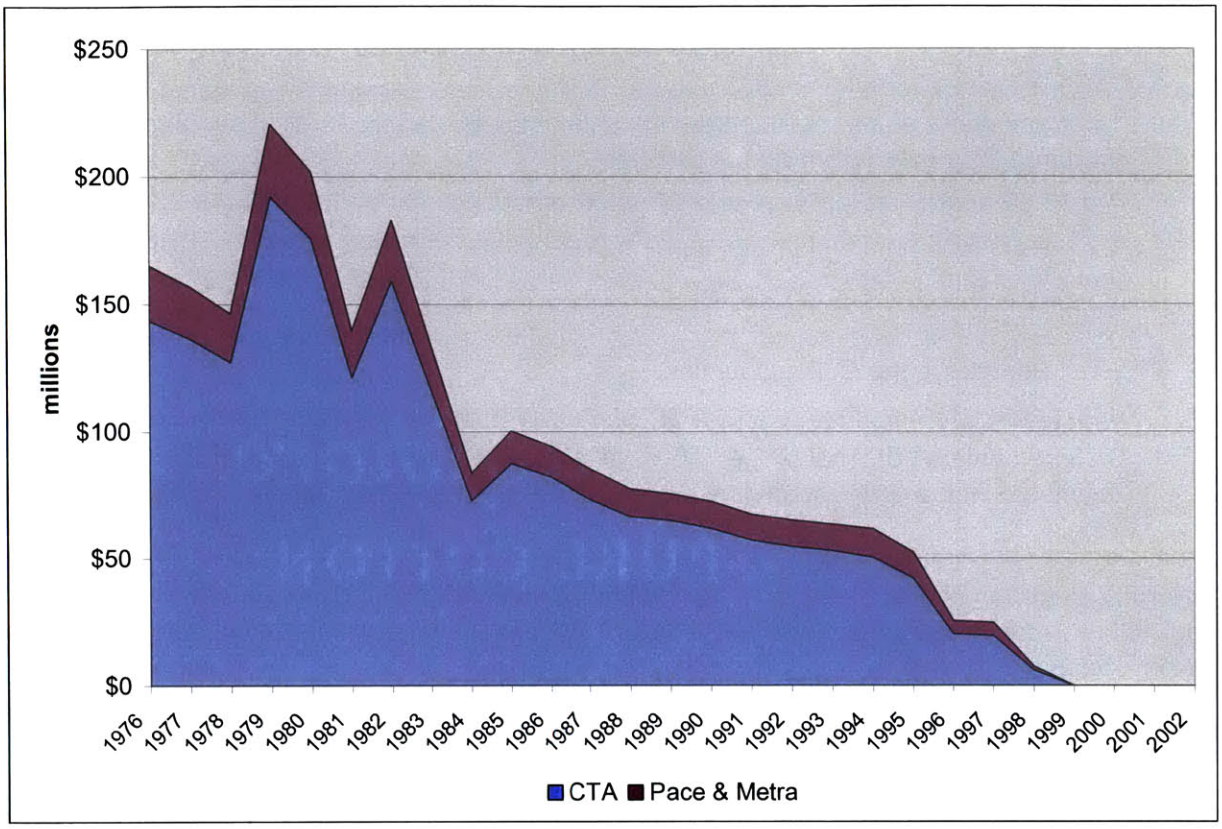



The reduced fare reimbursement passes directly through RTA to the service providers and pays for services that have already been rendered.

Source: Regional Transportation Authority, 2003.

Several managers at the CTA have speculated that the collar counties were able to reduce their fiscal contribution in 1979 because of the availability of federal funds. Chicagoland first began receiving federal subsidies in 1976 as part of the Urban Mass Transit Program. The bulk of the federal subsidies went to the CTA; however, the other service boards also received some funding. As Figure 3-3 presents, federal subsidies peaked in 1979 and were discontinued in 1998. Unfortunately, the region has done very little to adjust for these lost resources. In hindsight, it seems irresponsible to have set the funding ratios based on what turned out to be only a fleeting subsidy. Arguably, it would have been more prudent to put the federal subsidies to a temporary one-time use, such as bringing the system to a state of good repair or stabilizing fares, instead of using them to offset the collar county contributions. The sales tax changes that took place after 1983 are summarized in Table 3-2, but explained in greater detail in the following section (RTA Sales Tax).

***Figure 3-3. Federal Subsidies from 1976 to 2002 (in 2002 dollars)***




Source: Data assembled by the Chicago Transit Authority based on RTA Annual Reports.

## RTA Sales Tax

When it passed in 1979, the RTA sales tax drew 1 percent from Cook and ¼ percent from the collar counties. While these ratios essentially remain the same today, the exact sources of the sales tax money changed in 1990 with the passage of the Sales Tax Reform Act. This Act attempted to simplify the base and rate structure imposed by the state and local governments; however, it further complicated an already confusing transit funding allocation process. As part of the Act, the county sales taxes were increased from 5 percent to 6.25 percent and Cook County's portion of the RTA sales tax on retail goods (other than food and drugs) was reduced from 1 percent to 0.75 percent. However, Cook County still effectively contributes the entire 1 percent because it does not receive the countywide sales tax money (essentially equal to a ¼ percent sales tax) that the collar and downstate counties enjoy. To avoid revenue loss to the RTA a portion of the receipts from the State General Sales Tax, State Use Tax, State Service Occupation Tax and State Service Use Tax is paid to RTA annually. Though this money represents state resources, much like the public transportation funds, it is treated like RTA formula funds.

For the purposes of this report, the author assumes that the RTA Sales Tax is 1 percent in Cook County and 0.25 percent in the collar counties. Details of the sources of the tax are presented below (Regional Transportation Authority, 2003):

- RTA Tax Sources in Cook County
  - 1 percent of the gross receipts from the sale of drugs, certain medical supplies and food prepared for consumption off the premises;
  - A 0.75 percent of the gross receipts from all other taxable retail sales; and
  - 0.75 percent on personal property purchased outside of Northeastern Illinois and titled or registered with a state agency by a person with a Northeastern Illinois address (Use Tax).
- RTA Tax Sources in the Collar Counties
  - 0.25 percent of the gross receipt from all taxable retail sales; and
  - 0.25 percent on personal property purchased outside of Northeastern Illinois and titled or registered with a state agency by a person with a Northeastern Illinois address (Use Tax).

The RTA sales tax is distributed by a rigid formula, which was established by the Illinois State Legislature in 1983. Eighty-five percent of the RTA sales tax is distributed back to the counties loosely based on geography (Table 3-3). The remaining 15 percent is allocated at RTA's discretion. This sales tax represents a significant source of net operating funds for the Chicago Metropolitan Area. In 2004, the RTA estimates it will collect $672 million in sales tax revenue.

***Table 3-3. RTA Sales Tax Formula***

| | City of Chicago | Suburban Cook | DuPage | Lake | Will | Kane | McHenry |
|---|---|---|---|---|---|---|---|
| CTA | 100% | 30% | 0% | 0% | 0% | 0% | 0% |
| Metra | 0% | 55% | 70% | 70% | 70% | 70% | 70% |
| Pace | 0% | 15% | 30% | 30% | 30% | 30% | 30% |

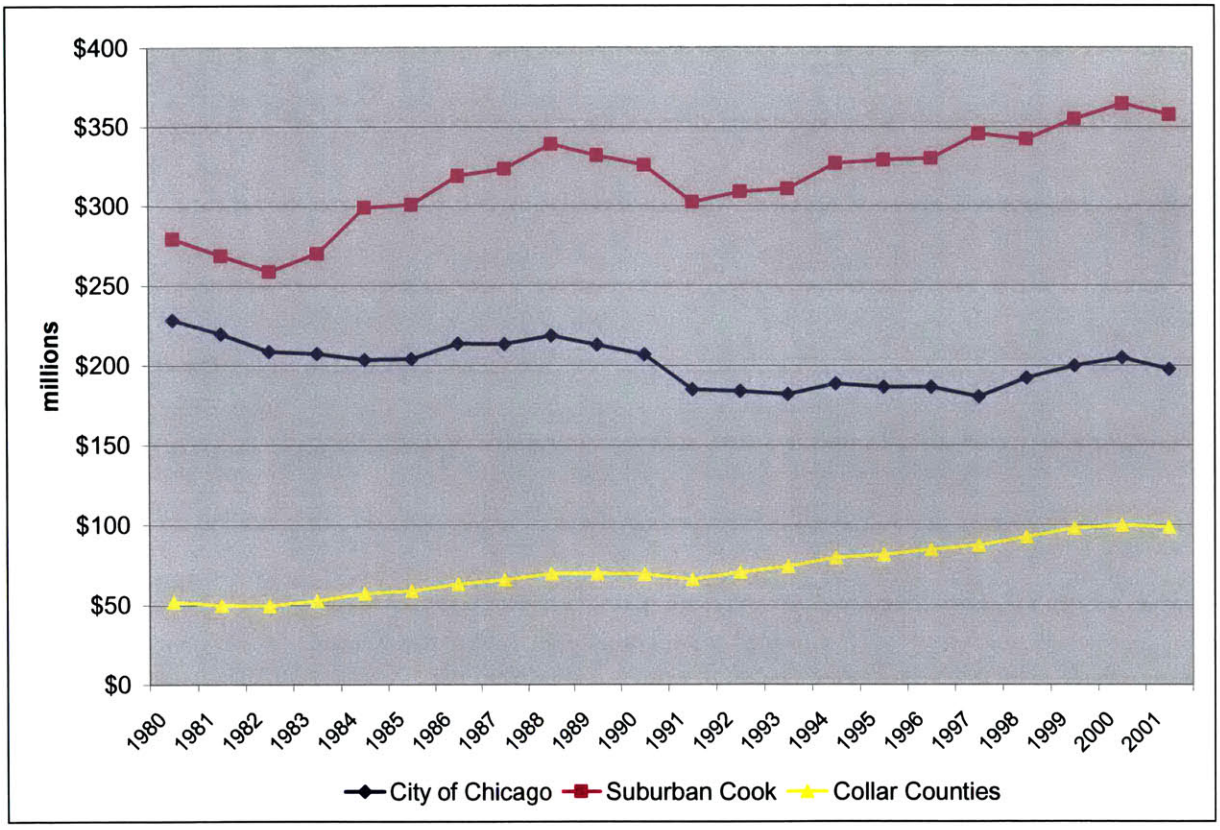
Source: Regional Transportation Authority, 2002c.

As with any legislative process, the sales tax formula was derived through a combination of technical analysis and political strategy. The 1983 amendments came about in part because suburban residents were frustrated with the poor financial status of the Chicago Transit Authority. Many felt that suburban residents were subsidizing urban services. In response to political pressures, the legislature arrived at a sales tax formula that distributes the collar county resources exclusively to Pace and Metra, the two systems that primarily serve suburban residents. Directing suburban funds solely to suburban areas has created some tension over time, as it underestimates the degree to which suburban residents use the CTA. Many suburban trips include a transfer to the CTA, and most Metra trips terminate in the City of Chicago.

Furthermore, suburban residents often use the CTA system when visiting the city. A recent CTA marketing piece estimated that "when transfers from Metra and Pace are considered, 19 percent of all CTA rides carried involve suburban riders" (Chicago Transit Authority, 2001).

The sales tax formula has also failed to keep up with the changing demographics of the region. For example, CTA's share continues to decline over time due to a declining sales tax base. This reduction partially stems from the shifting spatial patterns of the region, "between 1980 and 1990, the suburban population grew by 9 percent while the City of Chicago experienced a net population decline of 7 percent" (Regional Transportation Authority, 1998). Figure 3-4 shows how the sales tax revenues have changed over time. Not surprisingly, suburban Cook County makes the largest sales tax contribution, followed by the City of Chicago. The collar counties pay very little because they are less populated and only contribute ¼ percent to the RTA.

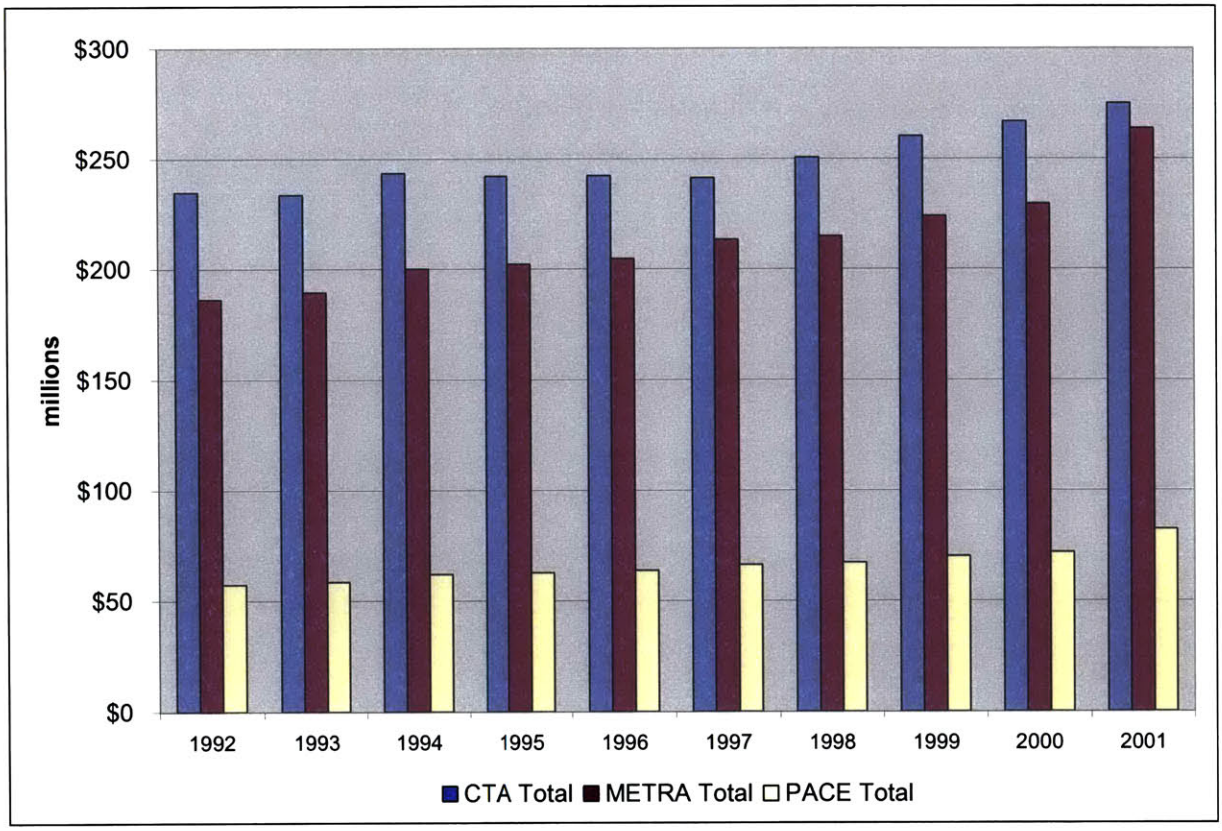
***Figure 3-4. Geographic Analysis of RTA Sales Tax Revenue***




Source: Data assembled by the Chicago Transit Authority based on RTA Annual Reports.

Figure 3-5 demonstrates how the RTA sales tax dollars are distributed to each service provider by formula. The graph indicates that for the most part, the sales tax has increased in terms of real dollars since 1992. However, the CTA's real funding decreased slightly between 1994 and 1997 from $247 million to $245 million. CTA's funding has generally increased despite the City's sales tax decline because it also draws some funds from suburban Cook. The graph also demonstrates how Metra's relative funding has increased over time due to population growth in suburban areas.

***Figure 3-5. RTA Sales Tax Distribution by Formula (in 2002 dollars)***




Note: This graph represents 85 percent of the RTA sales tax dollars collected from 1992 to 2001. Each agency's portion was calculated by applying the sales tax formula to the total revenue collected from the six counties.

Source: Regional Transportation Authority, 2002c.

## Public Transportation Funds and Other Discretionary Resources

In addition to the formula-driven distribution, the RTA allocates significant discretionary resources. In 2001 the RTA allocated approximately $198 million in discretionary operating dollars to CTA and Pace (Regional Transportation Authority, 2002b). These funds were used to make up the deficit between the agencies' net operating expenses and the RTA sales tax dollars they received through formula. RTA began receiving these funds as part of the 1983 Amendment to the RTA Act (Regional Transportation Authority, 1998). The discretionary resources come from two sources:

- **Public Transportation Funds (PTF).** The state legislature provides an additional 25-cent match for every dollar collected from the RTA sales tax. This money is drawn from the general fund and is distributed to the RTA provided that certain budgetary guidelines are met.[11] In 2001 the RTA received approximately $165 million from the public transportation fund (Regional Transportation Authority, 2002a). Since the PTF funds are based on the regional sales tax, they also decline during economic recessions.
- **Discretionary Sales Tax Dollars.** The RTA sales tax formula allocates 15 percent to RTA. The RTA allocates these funds at its discretion to cover administrative expenses, debt service, and discretionary distributions for operations and capital.

The RTA uses its discretionary funds for both capital and operating expenditures. In 2004, RTA budgeted $16.4 million for its own agency operations, $182.5 million in discretionary operating funds to Pace and CTA (see Table 3-4); and $20.4 million for transfer capital to CTA. The RTA also budgeted to allow Metra to convert $10.4 million of its formula funds to capital projects (Regional Transportation Authority, 2004).

Because the formula does not reflect the service needs of the region, the RTA has been forced to use large annual allocations of discretionary resources to prevent drastic service cuts at the CTA. For more than a decade, the CTA has received the majority of the operating discretionary funds (approximately 95 percent), because the sales tax funding formula does not cover its operating deficit. On the other extreme, Metra cannot provide additional service and still meet its cost recovery ratio. To compensate, it converts excess formula dollars to its capital programs (Regional Transportation Authority, 2002b). Conversely, it is not surprising that Metra is over-funded considering that in 2001 Metra and CTA receive almost equal portions of the sales tax, while CTA's operating expenses equaled approximately $884 million, which is nearly double Metra's operating expenses of $431 million (Regional Transportation Authority, 2002b).

[11] As specified in the RTA annual financial report, "none of the revenues from the PTF are payable to the RTA unless and until the RTA certifies to the Governor, State Comptroller and Mayor of the City of Chicago that it has adopted a budget and financial plan as called for by the Act" (Regional Transportation Authority, 2002a).

***Table 3-4. Allocation of Operations Discretionary Funds (based on 2004 budget)***

| Agency | Funds |
|---|---|
| CTA | $176,525,000 |
| Pace | $6,002,000 |
| Metra | $0 |

Source: Regional Transportation Authority, 2002c.

The allocation of discretionary funds is significant because it represents the RTA's primary leverage over the service agencies. Each service agency is required to submit an annual budget and periodic reports throughout the year. If an agency does not comply with RTA's requirements, the RTA can withhold discretionary funds or impose a budget on the organization.[12] However, RTA cannot withhold the formula funds. This gives the RTA very little control over Metra, whose formula-derived sales tax dollars exceed its net operating expense.

## Total Operations Funding

As the prior two sections demonstrate, regional funding mechanisms are quite complex. The majority of the $840 million in sales tax and state public transportation funds go to operations; however, both Metra and the CTA obtain a small amount of capital funding from these sources. The formula funds do not directly correspond to service needs, requiring the use of discretionary dollars make up the difference. Figure 3-6 attempts to summarize the inflow and outflow of these regional funds. This information is also presented in the tables below.

[12] RTA recently imposed a budget on Pace because they were not meeting the cost recovery ratio outlined in their budget.

***Table 3-5. RTA Sales Tax Funding in 2004***

| Total Sales Tax | $671,750,000 |
|---|---|
| City of Chicago | $201,806,000 |
| Suburban Cook | $366,947,000 |
| Collar Counties Total | $102,997,000 |

Source: Regional Transit Authority, 2004.

***Table 3-6. Discretionary Funding in 2004***

| Total Discretionary | $268,701,000 |
|---|---|
| Public Transportation Funds | $167,938,000 |
| Sales Tax (15% of Total) | $100,763,000 |

Source: Regional Transit Authority, 2004.

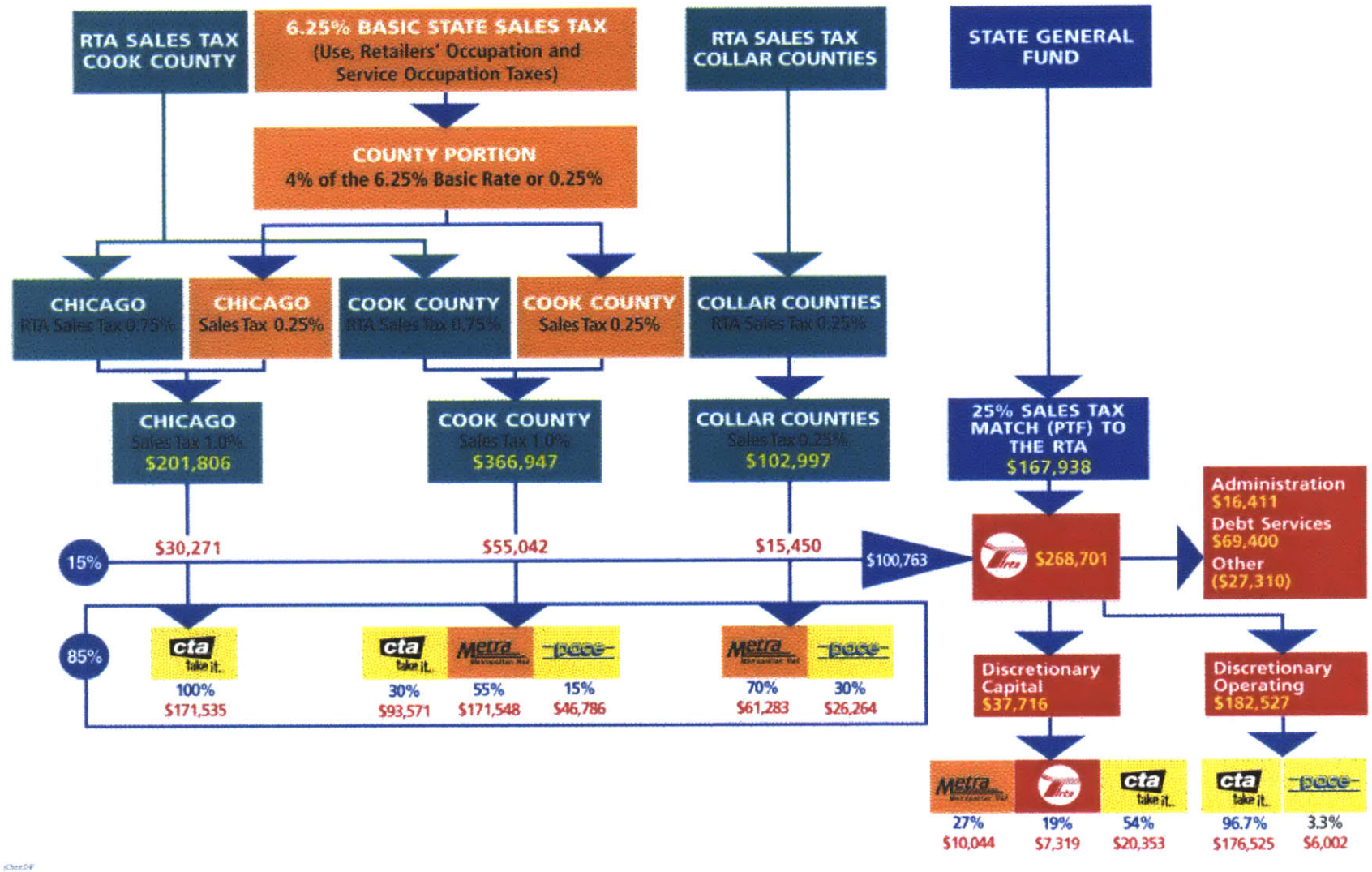
***Table 3-7. Regional Funds in 2004***

| Total Sales Tax & PTF Funding | $**$839,688,000** |
|---|---|
| CTA Funds | $461,985,000 |
| *Formula* | *$265,107,000* |
| *Discretionary Operating* | *$176,525,000* |
| *Discretionary Capital* | *$20,353,000* |
| Pace Funds | $79,052,000 |
| *Formula* | *$73,050,000* |
| *Discretionary Operating* | *$6,002,000* |
| Metra Funds | $232,831,000 |
| *Formula (operating)* | *$222,787,000* |
| *Formula (capital transfer)* | *$10,044,000* |
| RTA Funds | $65,820,000 |
| *Administrative* | *$16,411,000* |
| *RTA Debt Service* | *$69,400,000* |
| *Technology Capital* | *$7,319,000* |
| *Other* | *-$27,310,000* |

The RTA revenue presented in the last line of the above table primarily represents interest payments. This money is based on annual cash flows and cannot be relied on from year-to-year.

Source: Regional Transit Authority, 2004.

*Figure 3-6. 2004 Regional Funding Distribution (In and Out Flows)*




Source: Provided by the Chicago Transit Authority, developed based on RTA funding structure.

## 3.3 Evaluating the Success of the RTA

The RTA Act has served to stabilize operations expenses for the three service providers, yet it has done little to advance the real goals of transit over the last 30 years. Even at the year of its inception, the funding formula did not match up with the needs of the three service providers, relying instead on large annual distributions of discretionary funds to avoid massive service cuts. The changing demographics of the region have only exacerbated this problem over time. Furthermore, despite having such an extensive transit system, since the formation of the RTA ridership in the region has declined dramatically, while congestion has escalated. In short, during a period when public transportation ridership increased nationally, RTA saw a 30 percent loss in ridership.

### Increasing Congestion/Decreasing Ridership

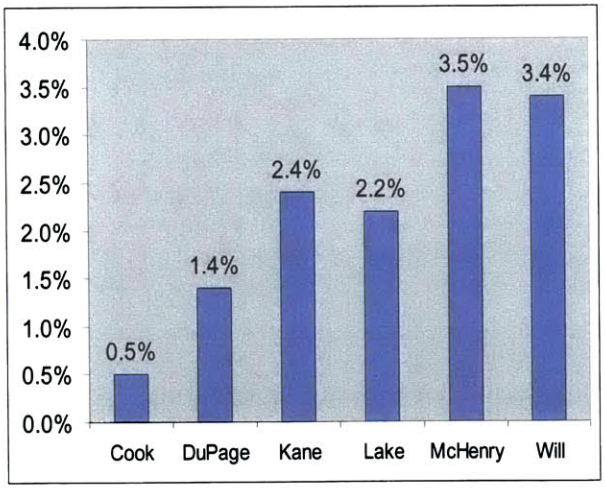
As Table 3-8 demonstrates, the collar counties have higher per capita incomes than Cook County and significantly higher per capita incomes than the City of Chicago, which has a per capita income of $20,175. Both DuPage and Lake Counties' per capita income exceeds Chicago's by over $10,000. Furthermore, the wealthy suburban counties are growing at a faster rate than Cook County. According to the 2000 Census, McHenry and Will grew the fastest between 1990 and 2000, followed by Kane and Lake (see Figure 3-7).[13] It is concerning that Cook County is subsidizing these transit costs for wealthy communities.

***Table 3-8. Per Capita Incomes by County (in 1999 dollars)***

| Location | Per Capita Income |
|---|---|
| City of Chicago | $20,175 |
| Cook (includes Chicago) | $23,227 |
| DuPage | $31,315 |
| Kane | $24,315 |
| Lake | $32,102 |
| McHenry | $26,476 |
| Will | $24,613 |

Source: U.S. Census Bureau, 2000.

***Figure 3-7. RTA Region Annualized Population Growth Rates from 1990 to 2000***

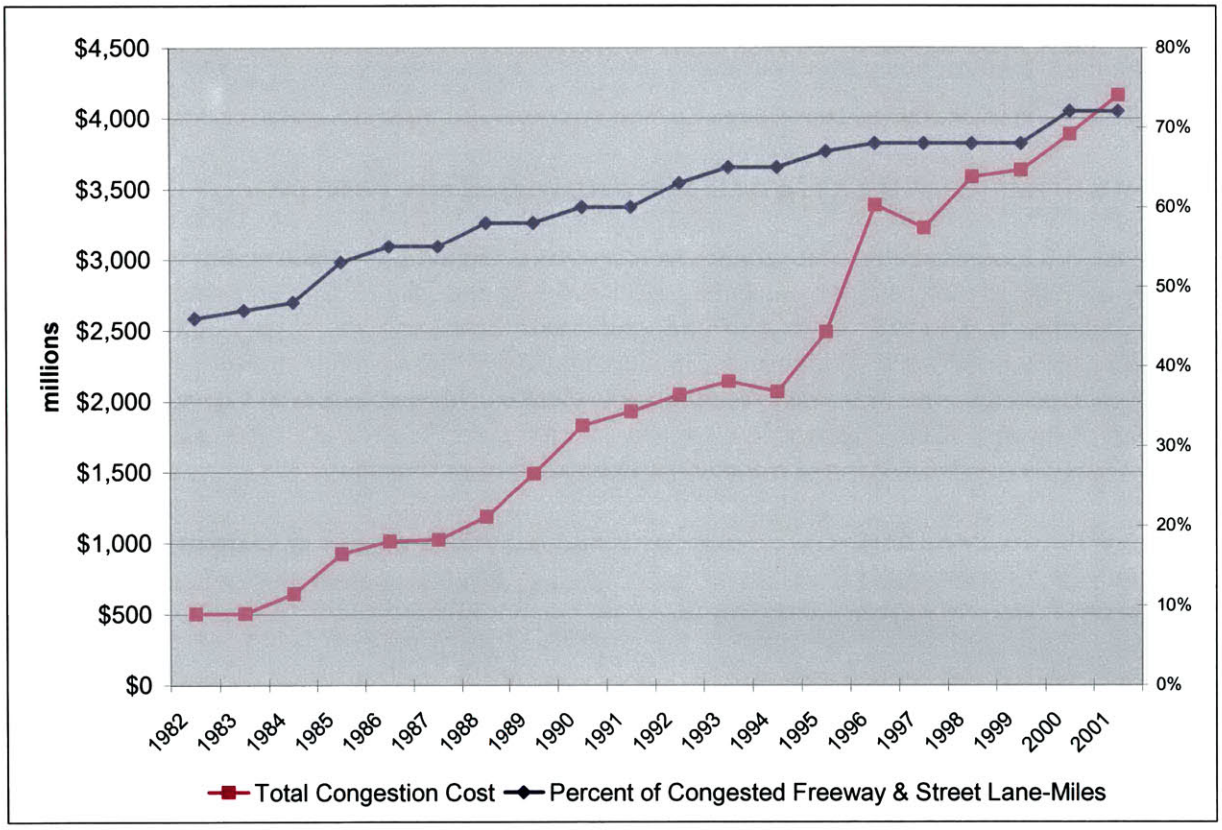



Source: Census Bureau (as published in RTA, 2004).

[13] It is important to note that Cook and DuPage are larger than the other four counties. While the smaller counties may have had a larger percent growth, the raw number of new residents may have been greater in Cook and DuPage.

Rapid population growth in the collar counties has contributed to a growing congestion problem in the region. The Texas Transportation Institute estimates that Chicago is the 3rd most congested metropolitan area in the United States. It also determined that the percent of congested streets and roadways in Chicago has increased from 46 to 72 percent in the last 20 years (see Figure 3-8) (Texas Transportation Institute, 2003). High levels of congestion have also contributed to air quality problems. The Environmental Protection Agency classifies Chicago as a non-attainment area.

***Figure 3-8. Congestion in Chicagoland is Increasing Over Time***



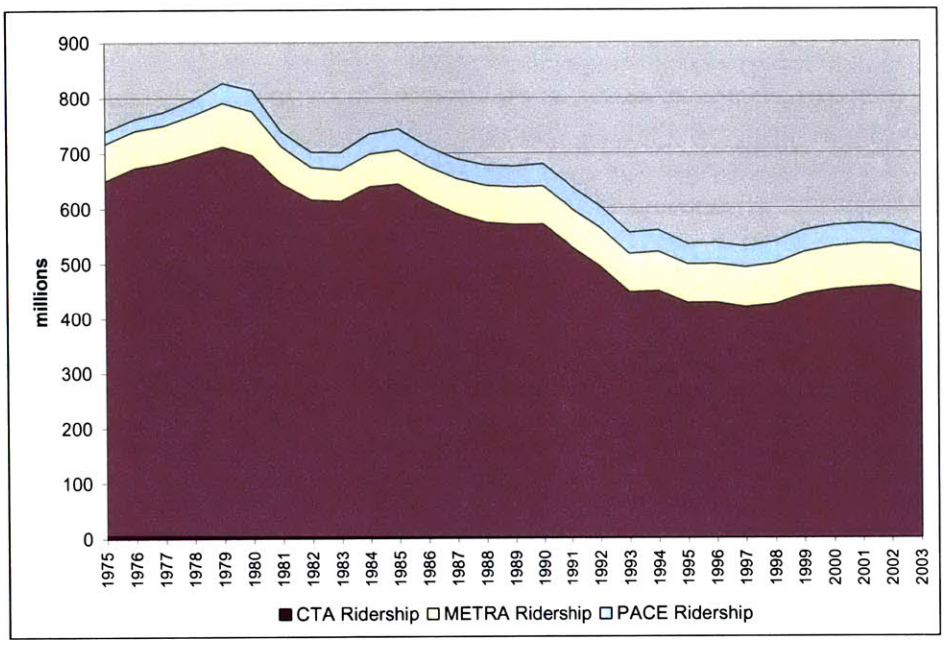

To determine estimated congestion costs for 2001, the value of time was estimated at $13.25 per hour, commercial costs at $3.05 per mile, and fuel costs at $1.50 per gallon.

Source: Texas Transportation Institute, 2003.

Suburban development and changing demographics are only partially to blame for the region's congestion. As Figure 3-9 demonstrates, since 1979 the RTA has lost approximately 30 percent of its riders or 275 million annual unlinked trips. While some of this loss can be attributed to exogenous forces, such as city jobs moving to the suburbs, the failure to maintain subsidies in real dollars and the restrictions imposed by the cost recovery ratios also hurt the transit system's ability to retain riders. The RTA rarely discusses ridership or congestion benchmarks when evaluating the performance of the transit in the region. For example, its 2004 budget book, touts an "unprecedented capital improvement program," rather than emphasizing the significant operating challenges faced by the region (Regional Transportation Authority, 2004).

The RTA also strongly promotes their bond rating as a measure of success. While having a high bond rating is important because it reduces the cost of capital, it is a relatively insignificant cost factor compared to the scale of most capital projects. More fundamentally, it is not a valid metric of transit's success. The rating agencies do not look at operations when establishing the ratings. Instead, they focus exclusively on the likelihood that an agency will repay bond holders.

***Figure 3-9. Ridership Decline in Chicagoland***




Source: Data assembled by the Chicago Transit Authority based on RTA Annual Reports.

## Declining Subsidies and the Cost Recovery Ratio

The shift from a 5 percent gas tax to a disproportionate sales tax significantly reduced the operating subsidies available in the region. The decline and ultimate loss of federal funding, in combination with growing paratransit expenditures, further exacerbated this trend. Just these changes alone would have forced dramatic service cuts and ridership declines throughout the region. If this had occurred, perhaps, the region would have recognized these trends sooner and corrected the associated inequities. Such a reflective process was circumvented however, by the presence of the statutory cost recovery ratio in 1983. This cost recovery ratio prioritizes traditional commuter markets between the suburbs and the CBD, while under-serving transit-dependent suburban residents who are more likely to use transit for non-peak work travel and non-work travel. As a result, the cost recovery ratio essentially put the region on auto-pilot, forcing incremental service cuts without a strategic vision for the regions transportation needs.

As a result of a requirement in the 1983 RTA Amendments, the Chicago Metropolitan Area has one of the highest cost recovery ratios in the United States. This "amended RTA Act requires that at least 50 percent of the costs of operating the regional system are recovered through system-generated revenues such as fares, advertising and concessions" (Regional

Transportation Authority, 2001). Fare box revenues make up the majority of the cost recovery. However, additional resources, such as municipal contributions and advertising revenues, also qualify.

The State Legislature implemented the cost recovery ratio as part of a series of measures to control the service providers' expenditures. The cost recovery ratio was intended to encourage more frequent fare increases. Table 3-9 presents the current fares in the region. While not exorbitant, these fares are above average. For example, the 2003 APTA Fact Book reports that the average one-way bus fare in North America is $0.74 and the average one-way heavy rail fare is $0.93 (American Public Transportation Association, 2003).

***Table 3-9. Transit Fares for One-Way Trips without a Transfer***

| Agency | Base Fares |
|---|---|
| CTA | $1.75 |
| Metra | $1.85 to $6.95 |
| Pace | $1.25 to $1.50 |

Note: Metra's fare is distance-based; Pace's regular fare is $1.50 and its local/feeder fare is $1.25.

Source: CTA, Pace and Metra Websites, 2003.

As part of the budgetary process, each property submits its cost recovery ratio to the Regional Transportation Authority. Table 3-10 indicates the proposed cost recovery ratios for 2003. The cost recovery ratio for Pace is particularly high compared to other suburban systems in the United States.

***Table 3-10. Projected Cost Recovery Ratios for 2003***

| Agency | Proposed Ratio |
|---|---|
| Pace | 40% |
| CTA | 52.9% |
| Metra | 55% |
| System wide | 52% |

Source: Regional Transportation Authority, 2002b.

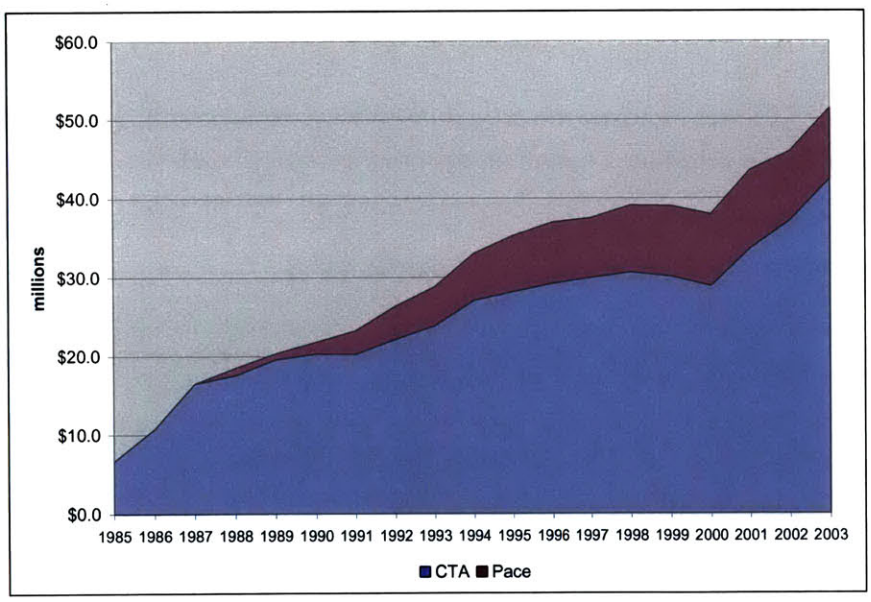
While limiting subsidy levels and implementing the cost recovery ratio contributed to the financial stability of the transit system for the last 20 years, these strategies also contributed to the regional loss of 30 percent of its riders while national ridership was experiencing small but steady increases in ridership. This cost recovery ratio is not a flexible planning tool, as evidence by its inability to change based on the growing role of paratransit in the region. The cost recovery ratio was set before the ADA mandated the provision of paratransit, which is significantly less cost effective than traditional fixed route service.

## Paratransit

As discussed in Chapter 2, the Americans with Disabilities Act requires transit providers to provide paratransit services within ¾ mile of their fixed route service. Since the ADA does not require commuter rail services to provide paratransit, Pace and the CTA shoulder the region's responsibility.[14] Paratransit is a vital service that provides independence to people with disabilities. Initially, paratransit demand was high because the fixed route systems were not accessible. Even as the systems themselves become accessible, demand for paratransit has remained high because it is difficult to transition people off of the door-to-door service. In 2002, the Chicago Metropolitan Area provided almost 21 million passenger miles in demand-responsive service (American Public Transportation Association, 2003).

Paratransit presents a real challenge to the region because the cost of providing paratransit is increasing faster than inflation (Figure 3-10). Furthermore, the fare box recovery for paratransit is very low, which makes it harder for the service agencies to meet their cost recovery ratio requirements. Pace has addressed this challenge creatively by seeking municipal partners to fund part of their demand responsive service. Since municipal contributions are considered part of the agency's cost recovery, these agreements help to offset lower performing services. By taking a positive approach to paratransit, Pace has been able to exceed its minimum requirements as defined by the ADA. However, many suburban communities still do not benefit from paratransit services.

***Figure 3-10. Paratransit Expenditures by CTA and Pace (in 2003 dollars)***




Source: Data assembled by the Chicago Transit Authority based on RTA Annual Reports.

[14] Metra is required by the ADA to provide a shuttle service from a qualified origin to the next accessible station. Metra does this at no additional charge to the passenger and does not require certification of disability status (Metra website, 2004).

## 3.4 Allocating Transit Resources

Perhaps the greatest challenge that the region faces is the current system of resource allocation. Geographically-based formulas, like the one used in Chicago, are politically popular because the distribution of funds is easily understood and perceived as fair by residents (i.e., voters). Once established, they tend to be relatively free from political manipulation. Unfortunately, geographically-derived funding formulas do not relate directly to the service needs of a region, which can cause over-funding of some services leaving others struggling for resources. Geographic funding also limits the ability to engage in successful regional planning as resources cannot be easily moved to reflect the changing priorities of a metropolitan area, nor do they typically address changing demographics. The following section presents the advantages and disadvantages of distributing funds based purely on geography. This assessment is followed by a discussion of the pros and cons of several alternative allocation mechanisms.

### Geographic Distribution of Funds

The largest portion of regional operating funds in the Chicago Metropolitan Area is distributed through a geographically based formula. In essence, the RTA sales tax formula returns funds to their source. For example, the collar counties do not pay for CTA service and the City of Chicago does not pay for the suburban bus or commuter rail systems. As indicated previously, the formula was derived only partially from geographic analysis. If it were purely based on geographic equity, the RTA would have to ensure that operating subsidy allocated to each county exactly equaled the financial contributions of that county.

#### *Advantages*

There are many advantages to distributing funds based on geographic equity, such as:

- Limited opportunity for political manipulation;
- Easy to administer and does not require extensive data collection; and
- Consistent from year to year, which encourages strategic long-term planning by both RTA and the service providers;

This type of geographic distribution ensures that suburban areas will receive consistent transit service. Otherwise a region might choose to concentrate its complete transit resources in the urban area, where the market for transit is greatest. In the Chicago Metropolitan Area, distributing funds geographically has helped to sustain a strong commuter rail and suburban bus service that have several corollary benefits, such as congestion mitigation. Providing extensive suburban services also supports the urban core by providing non-automobile connections between the suburbs and the city. Perhaps most importantly, suburban services expand the political and revenue base for transit and encourage suburban residents to accept transit subsidies.

### *Disadvantages*

In Chicago, the geographically based formula has negatively impacted the RTA, the CTA and Pace. The formula's inflexibility hinders RTA's ability to promote regional planning and to make decisions based on metropolitan-wide analysis. The CTA has experienced significant challenges because its portion of the sales tax revenue falls significantly short of its net operating expenses. As a result, the CTA depends heavily on RTA's discretionary dollars in a way the two suburban service providers do not, which creates instability and inhibits multiyear budgeting. Changing demographics in the area, which caused a shrinking tax base within the City of Chicago, also hurt the CTA. Pace too suffers from inadequate resources; however, Pace is even more impacted by related funding mechanisms, such as the high cost recovery ratio, which is embedded in the regional transit legislation. Finally, given the spatial distribution of average incomes, pure geographical distribution is quite regressive.

Regions that allocate funds to the exact communities that pay the funds confront a series of administrative complications in calculating service levels. For example, complications arise when the funding agency has to allocate the costs and benefits of commuter rail services that begin in the outer suburbs and terminate in the urban core. A similar challenge arises when an agency attempts to consider how to allocate the benefit of suburban residents using the urban system while visiting the city. Air quality and economic development benefits stemming from a strong urban transit system are also difficult to allocate because these benefits are not contained to specific geographic boundaries.

Perhaps the most significant drawback in a return to source system is that resources are not distributed based on need, providing "no link between the amount of assistance awarded and the needs of the transit operations" (Demchur, 1983). This allocation mechanism leads to over-funding in high-income areas and under-funding in lower-income areas. Furthermore, such a distribution strategy acts as a disincentive for the service providers to accomplish regional objectives because funding is independent of service provided (Demchur, 1983).

In Chicago, the geographic basis of the funding formula has meant that Metra receives an excess of operating funds, while CTA and Pace suffer from a lack of resources. This disparity weakens the influence of the RTA because it loses its flexibility to allocate discretionary funds. In addition, as Metra requires no discretionary funds for its operating expenses, the RTA has limited leverage over the commuter rail service provider. Without this direct influence, the RTA must rely on Metra's good will when it attempts to influence the regional transit system.[15]

## Alternative Allocation Strategies for Transit Operating Resources

In light of the serious shortcomings of the current funding allocation mechanisms, the following section outlines alternative allocation schemes and considers their potential for the Chicago

[15] Since the RTA and Metra both have suburban controlled boards, they often have similar policy goals.

area. Section 5.2 revisits this issue when it discusses scenarios for allocating additional collar county resources.

### *Need- or Deficit- Based*

With a need-based strategy, the funding agency agrees to cover the service providers operating deficit by paying for all net operating expenses. Such an approach to funding would only benefit Chicagoland if implemented in conjunction with a regional planning approach that establishes regional priorities for levels of transit service. Under this scenario, the operating budget of each service provider would reflect the desired level of service for the region. Need-based funding introduces the risk that other stakeholders, such as labor, will drive up costs. Distributing funds based on a maximum subsidy per rider, by type of mode or trip, or based on performance can help to mitigate this risk.

### *Performance-Based*

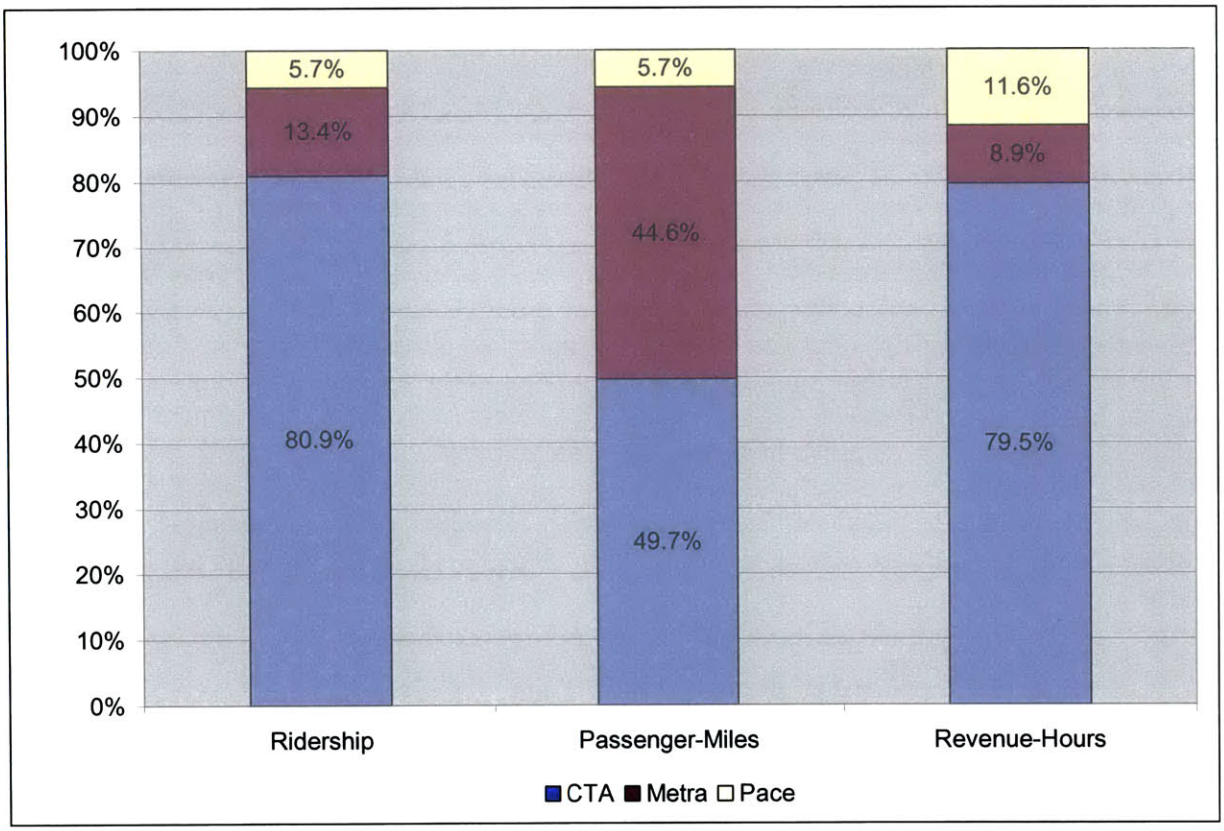
Performance-based funding allocates the majority of the available resources to the most efficient services. "Performance based subsidy allocation generally relates a system's level of performance, as defined by some predetermined indicator(s), to the amount of assistance provided" (Demchur, 1983). This type of funding strategy rewards agencies for service and/or cost efficiency. Performance-based funding allocation focuses on maximizing benefits and minimizing costs. It relies on performance indicators such as: ridership, operating expense per passenger mile, or operating expense per revenue hour. Performance-based funding often fails to consider local factors, such as population density, which gives urban systems an inherent advantage over suburban systems (Demchur, 1983). Furthermore, performance-based funding typically does not consider measures of success such as customer satisfaction, which are often subjective and difficult to evaluate. Given this constraint, it is easy to become overly focused on what can be measured, rather than what is truly important to the success of the system. Figure 3-11 presents three performance measures for the region, which were prepared by the Chicago Transit Authority as part of their financial planning.

As Figure 3-11 suggests, the distribution of resources depends on the performance measures considered. If the funds are distributed by passenger-miles, a significant amount of resources go to Metra, whose passengers tend to take long trips with little turnover. Alternatively, distributing the funds by revenue hours favors Pace and CTA bus because bus systems typically support short trips with high turn over. If a performance based system were adopted, a thoughtful evaluation of performance measures would be required to identify a set of evaluation tools that best reflect the region's transit goals.

Using a performance-based system to distribute increased funding can provide a healthy incentive to improve performance and expand service. However, if it is used as the only mechanism to distribute funds among service providers, it can also destroy cooperation. In the Chicago context, the highly simplistic cost recovery ratio has hurt some market segments more than others. CTA and Pace bus have suffered the most under this system, while CTA rail rapid transit and commuter rail ridership has been stabilized. It is impossible to identify one performance measure that reflects the unique quality of each mode and market segment. An

effective set of performance measures will recognize the distinct markets that transit services and emphasize internal efficiency, without pitting one mode against the other. To combine the benefits of a geographic system and a performance-based system Chicagoland should consider an allocation strategy that combines geographic elements with a sophisticated performance-based system to distribute increases in funding. This new strategy should provide healthy incentives, while still supporting regional and inter-modal cooperation.

***Figure 3-11. Performance Measures for Chicagoland Transit***




Source: Calculated by Jason Lee, Chicago Transit Authority, 2004.

## *Discretionary*

As indicated previously, RTA does have some Discretionary Funds to distribute. However these funds are not truly discretionary since they must be consumed in large part by CTA's operating deficit. An increase in overall transit funding in Chicago or a revision to the RTA sales tax formula could enable RTA to gain greater discretionary power. A more radical approach would involve establishing a single pot of money and giving complete discretionary power to the RTA. With such authority over the provision of regional transportation, the agency could become a significant actor in promoting regional planning in Chicago. However, greater discretionary funding also expands the amount and significance of funding that the separate service boards must compete for, which could detract from regional cooperation. If the RTA Board remains suburban dominated, the CTA could suffer even more under a discretionary system than it does

under the status quo. This alternative represents significant and ongoing risk for the Chicago Transit Authority.

### *Target a Specific Population or a Specific Goal*

A final funding strategy prioritizes allocating funding to the transit properties based on a set of goals that the RTA Board could establish. For example, funds could be allocated based on providing service to captive riders or based on congestion reduction. Funding based on specific objectives can be complicated in transit, because agencies often juggle competing goals. For example, a transit property may simultaneously strive to provide low cost service and pay a living wage to transit employees. For this allocation strategy to work, the RTA's goals would have to be extremely transparent. This often undermines the political process, which is most successful when multiple constituencies perceive a direct benefit. For example, while providing service to captive inner-city riders is a worthy endeavor, it might not capture the same support from middle- and upper-income suburban residents as a commuter-rail project.

One promising goal that the RTA could work toward is promoting smart growth by reducing urban sprawl, pollution and congestion. A local civic group, known as Chicago Metropolis 2020, has already established this goal and is working towards its realization. Allocating funding based on the objective of promoting smart growth could completely transform the current budgeting process by shifting and redefining the measures of success. In order to receive funding, service providers would need to quantify how their services accomplished smart growth principles. As with the performance-based method, this goal-oriented approach would be very data intensive and require the establishment of robust and widely-accepted criteria. Additionally, having a primary focus on smart growth could detract from other transit goals, such as serving captive riders.

## 3.5 Looking to the Regional Task Force

In 2003, the Governor of Illinois convened a regional task force to evaluate the issues presented in this case study.[16] In addition to the RTA, the task force was also charged with evaluating the roles of the following agencies:

- **CATS.** Chicago Area Transportation Study
- **NIPC.** Northeastern Illinois Planning Commission
- **ISTHA.** Illinois State Toll Highway Authority

The task force was comprised of three members appointed by the Governor (including Chair U.S. Congressman William O. Lipinski), two members appointed by the President of the Senate, two members appointed by the Speaker of the House, two members appointed by the Senate minority leader, and two members appointed by the House minority leader. Initially, several advocacy groups hoped that the governor would appoint a member of Chicago Metropolis 2020

[16] The task force was created by Public Act 93-405 (SB 726).

to participate on the committee, since this organization had been lobbying for a regional evaluation of Chicago's transportation system for some time. In the end, the Governor did not appoint anyone from this group, which has been relatively non-visible since the task force started meeting.

In March 2004 CTA President Frank Kruesi testified before the regional task force about the funding system for the RTA. He focused on many of the same challenges identified in this chapter. The RTA should have been the agency to present these findings to the task force since they represent the regional transit interests and are responsible for identifying and acting on broken pieces. However, the RTA does not view the system as broken. At the time of this report, the Governor's Task Force had proposed several possible changes, including combining Metra and Pace into one agency and/or revising the RTA Board structure. To date these recommendations have neither been pursued nor implemented. Despite the CTA's efforts, the task force does not appear willing to address the funding formula or the need for additional resources.

## Summary

The large reliance on discretionary funds combined with the nuances of the geographic formula make it difficult to develop support for subsidy increases. The formula is overly complicated and divides the three transit agencies apart. Significant service cuts are avoided only through a large annual appropriation of discretionary resources to the CTA. The cost recovery ratio exacerbates the problems associated with the geographic formula because it plays market segments (such as bus and rail) against one another, compromising several overarching goals of transit (such as accessibility and congestion mitigation). Bus, paratransit, off-peak, and cross-town trips suffer, while peak heavy rail and commuter rail services to the central business district improve. The cost recovery ratio is one performance measure, but it is not a sophisticated enough tool to promote efficiency within a market segment.

To overcome these challenges, the region should revise the funding formula to include geographic funds, statutory performance funds, and RTA discretionary resources. The geographic formula should distribute a specific percentage of resources to each agency, but should allocate the region's resources as a single pool of funds. Maintaining a geographic element will ensure that the suburban constituents remain engaged, but will encourage the service providers to work together to increase resources. The statutory performance measures will lead the agencies to increased efficiencies, but will not improve one market segment at the expense of another. Finally, allowing RTA a set of discretionary resources will introduce flexibility into the system and give the agency the necessary tools to work on inter-agency projects, such as fare integration. These recommendations are expanded in Section 6.2

# 4. TREND ANALYSIS

In order to provide the Chicago Transit Authority with funding recommendations, it is important to understand how expenditures, revenue streams, and subsidies have changed over time. The CTA provides a unique opportunity to conduct an extended trend analysis because "its basic structure has changed little in more than 50 years" (Savage, 2004). For this study, the author was fortunate to have access to a fifty year data set assembled by Ian Savage and Eric Peterson at Northwestern. The initial dataset spanned from 1948 to 1997. It was updated for this analysis to include 1998 through 2001. The author is also grateful to Jason Lee at the Chicago Transit Authority, who provided additional data on topics of recent concern including paratransit expenditures and the decline of federal operating subsidies.

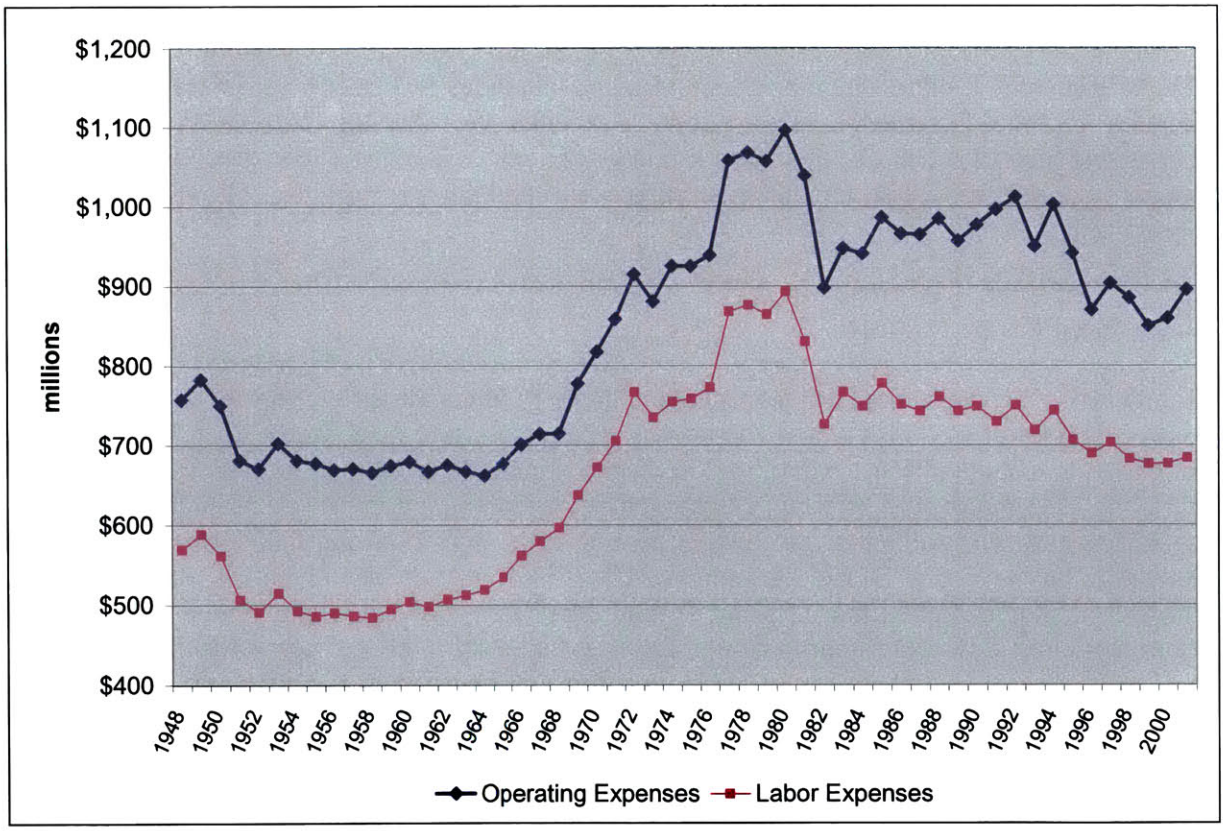
This chapter is divided into three primary sections: Expenditures, Revenue, and Operating Subsidies. All financial data has been converted to 2001 dollars. The majority of the graphs include data from 1948 to 2001; however, in some instances a shorter time period is presented because of data limitations. This chapter evaluates the Chicago Transit Authority using quantitative metrics, such as revenue per passenger and expenditures per revenue mile. Other measures of success, such as customer satisfaction and service reliability, are not captured in this analysis.

## 4.1 EXPENDITURES

An analysis of CTA's annual operating expenditures in real dollars reveals that operating costs peaked in 1981 at $1.1 billion (see Figure 4-1). Expenses were quite stable from 1951 to 1969, but began to climb in 1970. During the 1970's the annual deficit surged to over $560 million. In 1951, the CTA negotiated with labor to implement massive productivity gains (e.g., eliminating the trolley cars and reducing the number of operators from one per car to two per train) in exchange for a cost of living agreement. The COLA is partially to blame for the rapidly increasing labor expenditures because in high inflationary periods, such as the 1970s, these agreements are particularly burdensome. However, had the CTA not agreed to this provision, they would not have been able to implement the cost savings in the previous two decades (Allen, 1996). Since 1981, total operating expenditures have declined. The CTA has realized these savings partially through recent productivity gains, such as reducing the number of train operators from two to one in 1997. However, some of these savings have also come through service cuts.

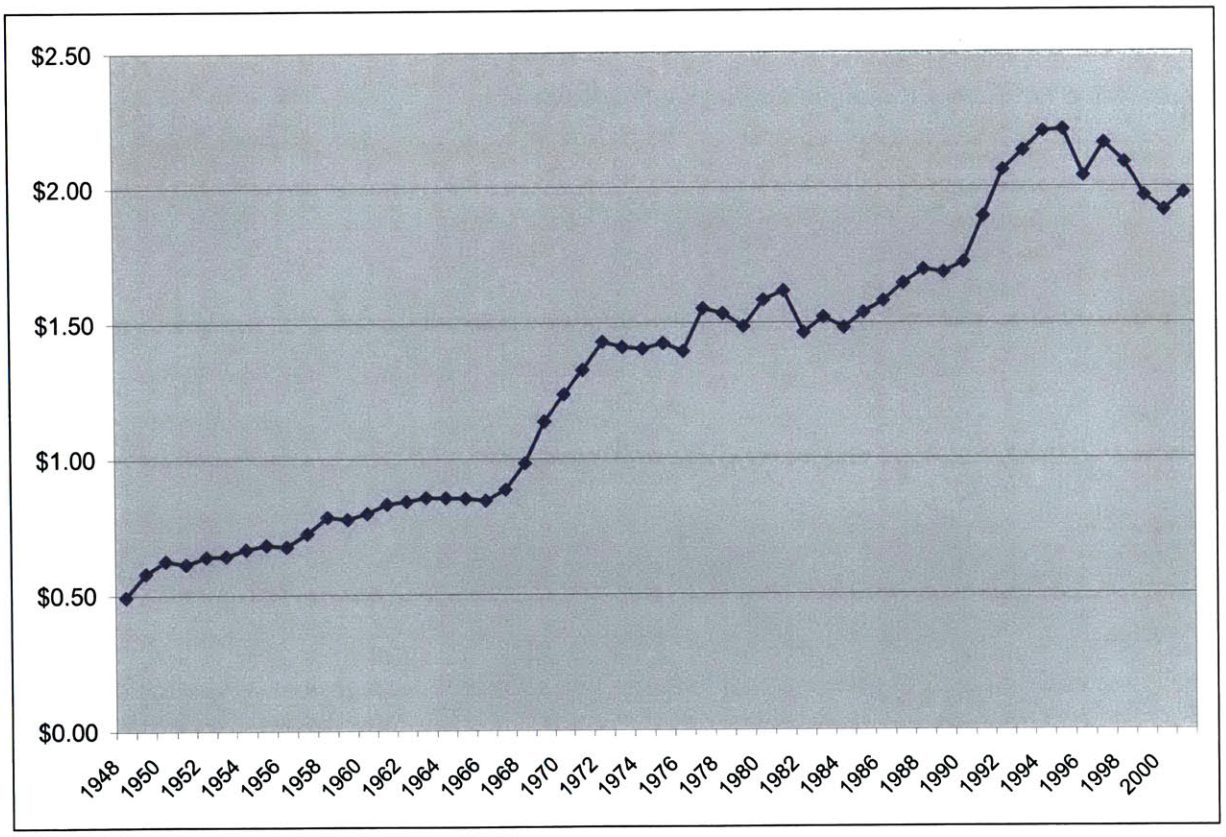
Labor represents the largest portion of CTA's operating expenses. Between 1948 and 2001 labor ranges from 72 to 84 percent of total operating expenditures. Benefits, including health care, vacation days, and pensions, are included as part of labor expenditures. In recent years, the CTA has become increasingly concerned about the rising costs of healthcare. From 1997 to 2003 healthcare costs increased by 62 percent, while the consumer price index only increased by 14.6 percent (Chicago Transit Authority, 2003b). The graph of labor expenditures closely parallels the graph of total operating expenses. Both peaked in 1980, and both have followed a general downward trajectory since. Annual fluctuations may be attributed to the number of annual weekdays and nuances in labor contracts.

***Figure 4-1. Total Operating Expenditures and Labor Expenditures from 1948 to 2001 (in 2001 dollars)***



While evaluating total operating expenditures provides key insights, additional information can be obtained by evaluating operating expense per passenger trip, which is a measure of cost effectiveness (see Figure 4-2). Operating expenses per unlinked trip began at $0.49 in 1948 and peaked at $2.21 in 1995. The most rapid losses in cost effectiveness occurred from 1967 to 1972 and 1990 to 1994. Between 1996 and 2001 operating expense per passenger trip fluctuated between $1.91 and $2.16. The Chicago Transit Authority has experienced decreasing cost effectiveness over the past five decades because the system has become more expensive to operate while ridership has been on the decline. In the late 1990's this trend was offset somewhat through productivity enhancements and modest ridership growth.

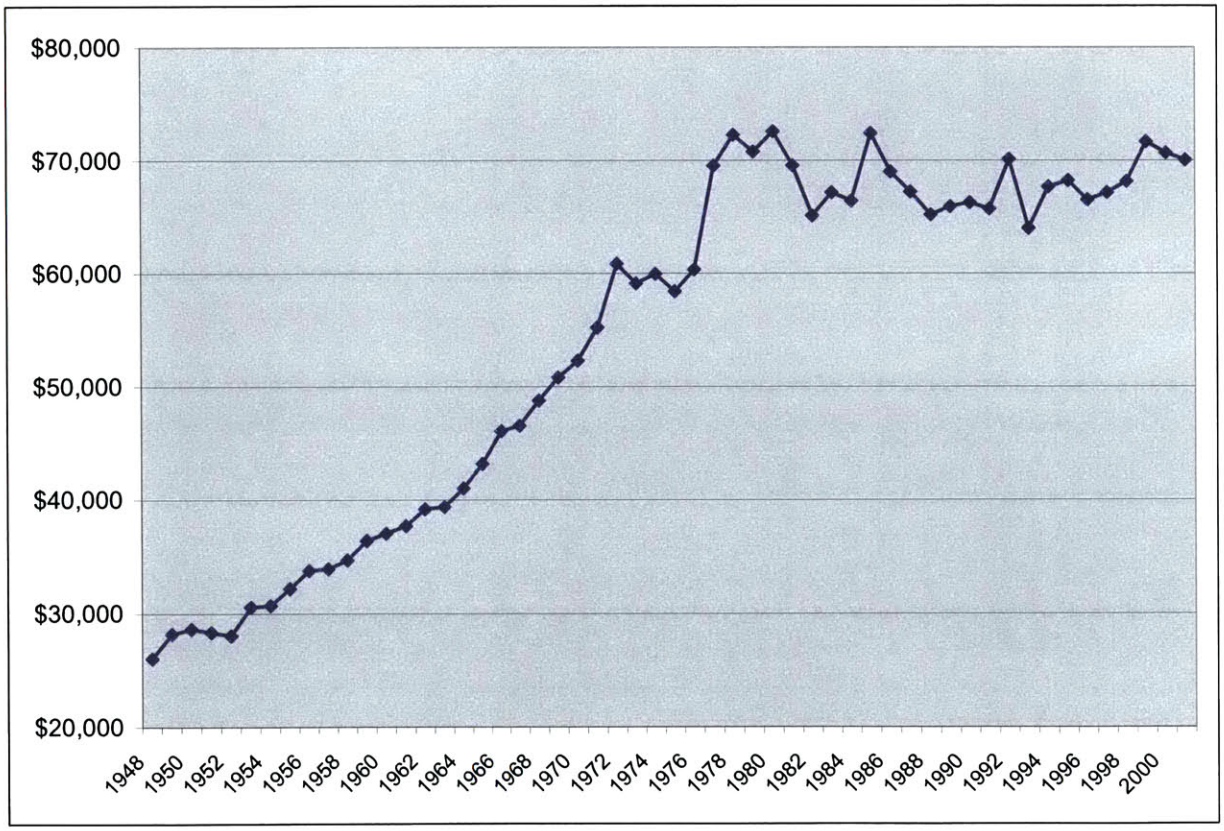
***Figure 4-2. CTA's Operating Expense per Unlinked Passenger Trip***




Source: Savage & Peterson CTA Database.

The cost per employee is one measure of productivity and is determined by dividing the total labor expenditure by the number of full time equivalent employees. As Figure 4-3 reveals, the cost per employee in real dollars has increased considerably since 1948. Transit labor negotiates salaries and benefits using collective bargaining techniques. Over time, this has lead to increasing costs to employees. Real labor costs per employee increased steadily until 1978 but have remained relatively stable for over the past 25 years. The most significant change in labor costs per employee occurred between 1976 and 1980 and was a contributing factor for the 1979 and 1983 suburban backlashes to transit. In 2001 the national average compensation for a transit employee was $44,100, which is significantly less than the CTA's 2001 cost per employee ($70,032) (American Public Transportation Association, 2003). Some of this difference may be attributed to the relative strength of labor, however much of this difference should be attributed to the cost of living differential between Chicago and an average U.S. city.

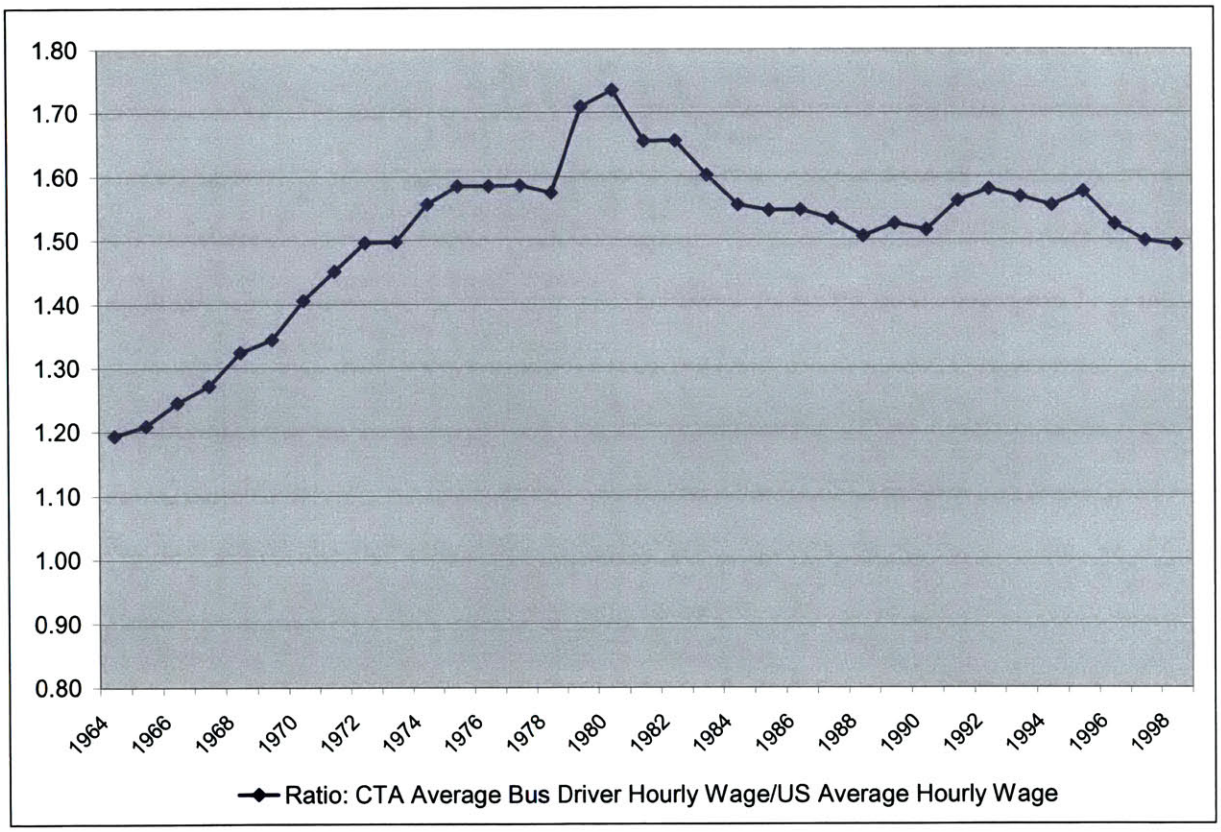
***Figure 4-3. CTA's Labor Costs per Employee (in 2001 dollars)***




Source: Savage & Peterson CTA Database.

Figure 4-4 presents CTA's highest contracted wage compared to the average domestic wage. This wage is paid to employees who have been working at CTA for 3 years or more. Typically, 90 percent of transit operators qualify for this hourly wage. Since its creation in 1948, CTA wages have exceeded the average domestic wage; however, the greatest wage differential occurred in 1979, when the CTA bus driver wage exceeded the average domestic wage by $10.95 (in real dollars). From 1981 to 1988 domestic wages increased faster than CTA wages. Since 1988, CTA wages have increased at about the same rate as the average domestic wage. From 1999 to 2003 the highest contracted wage hovered at $20.01 while labor and management negotiated a new contract. Through arbitration, the two sides reach an agreement in December 2003 and the wage increased to $23.01. As part of the settlement, employees received a bonus payment as back pay.

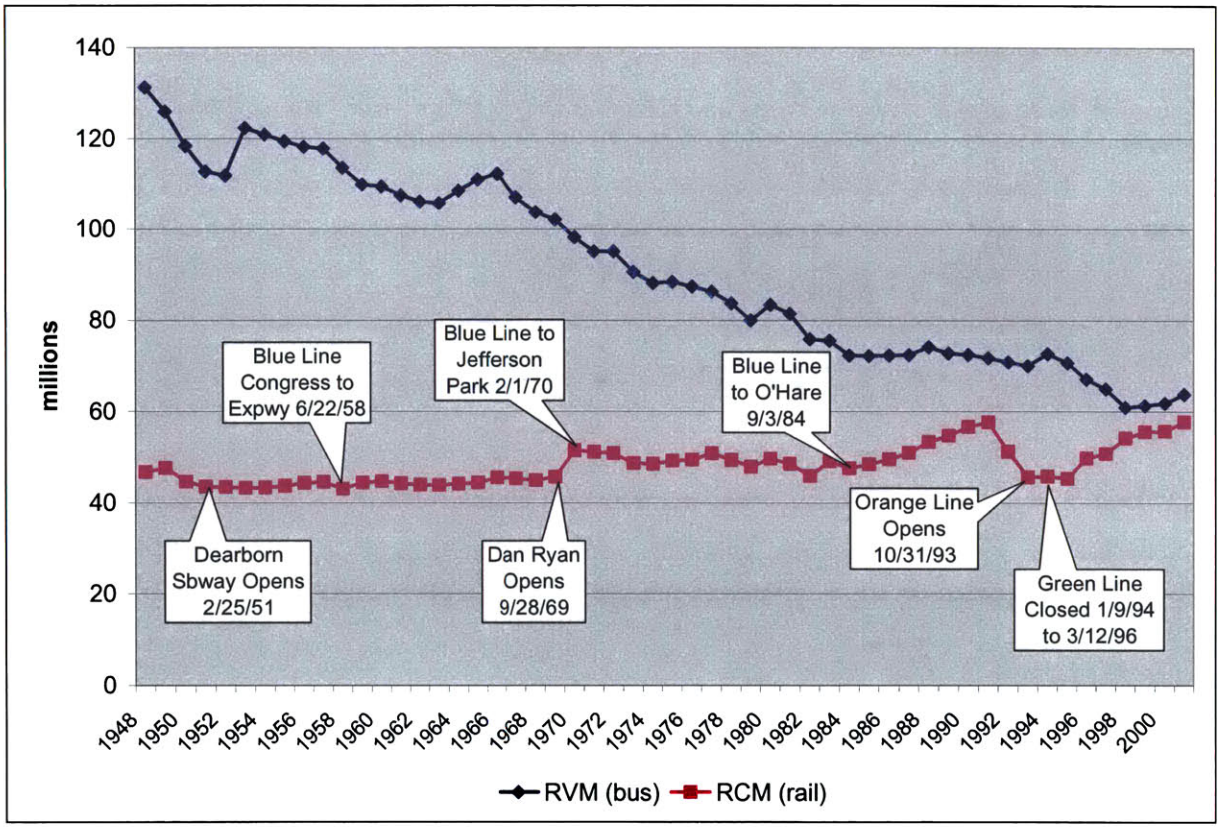
***Figure 4-4. Ratio of U.S. Average Wage and CTA Bus Driver Wage from 1964 to 1998 (in 2001 dollars)***




Source: Savage & Peterson CTA Database.

As Figure 4-5 reveals, revenue vehicle miles declined significantly from 1948 to 2001, while rail experienced moderate increases. By maintaining rail service and cutting bus service, the CTA has changed the relative mix of transit services. In 1948, bus revenue vehicle miles represented 74 percent of total revenue miles, but only 53 percent in 2001. Given a limited set of resources, agencies have a tendency to shift resources from the weakest to the strongest services. This is a good strategy to a point, but if taken too far it will result in gaps in the system and large segments of the population will shift from transit to the automobile.[17]

***Figure 4-5. CTA's Bus and Rail Revenue Miles from 1948 to 2001***




Source: Savage & Peterson CTA Database.

Figure 4-6 analyzes CTA's service effectiveness for bus and rail by evaluating unlinked passenger trips per revenue mile. While both have declined by 50 percent over the last 54 years, the bus decline appears more dramatic because the bus system began at a much higher rate of effectiveness.[18] Service effectiveness captures the relationship between changes in service and changes in ridership. Year-to-year fluctuations may also reflect exogenous factors

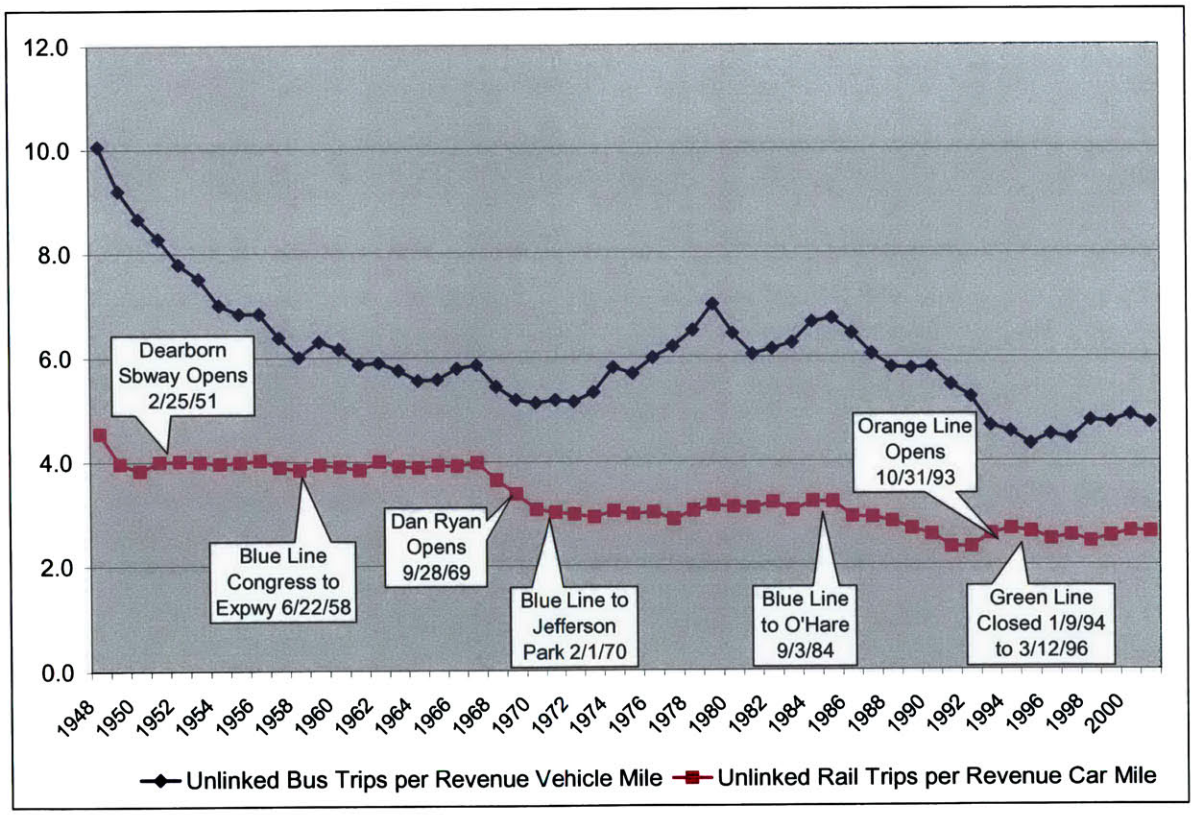
[17] Prior to 1997, the CTA required to drivers to operate a train.

[18] Bus trips tend to be shorter and have higher turnover, which is why service effectiveness is higher for the bus than the rail.

such as economic cycles. For example, the small rise in bus effectiveness beginning in 1997 may have been caused by the market boom, which supported increased ridership.

Unlinked trips per bus revenue mile started at 10.1 in 1948, declined until 1972, then rose until 1979, when unlinked trips per bus revenue mile reached 7.0. In recent years, bus service effectiveness has fluctuated between 4.3 and 4.7. Unlinked trips per revenue car mile remained steady for the first two decades and than dropped from 4.0 to 3.0 in five years. A second decline occurred between 1985 and 1991. When the CTA closed the green line in January 1994 service effectiveness rose slightly and in recent years has fluctuated between 2.4 and 2.6. Savage points to the decline in service effectiveness as a failure on the part of CTA to cut service in response to declining demand. He identifies lowering fares as a preferable strategy for maximizing consumer welfare given a fixed budget constraint. He cites this as a "worldwide phenomenon [that] has made riders worse off as the price/output combination moves further away from that which would maximize social welfare given the budget constraint" (Savage, 2004). Savage does not question the presence of the budget constraint, but one could make an argument that the budget constraint is unreasonable in the context of auto externalities. If greater service cuts had been made, even more "choice" riders would have abandoned the system, further weakening the political support for transit and worsening the budget constraint. As increasing income levels over time has resulted in more "choice" riders, and less captives, the strategy of service cuts would have likely resulted in worse ridership losses.

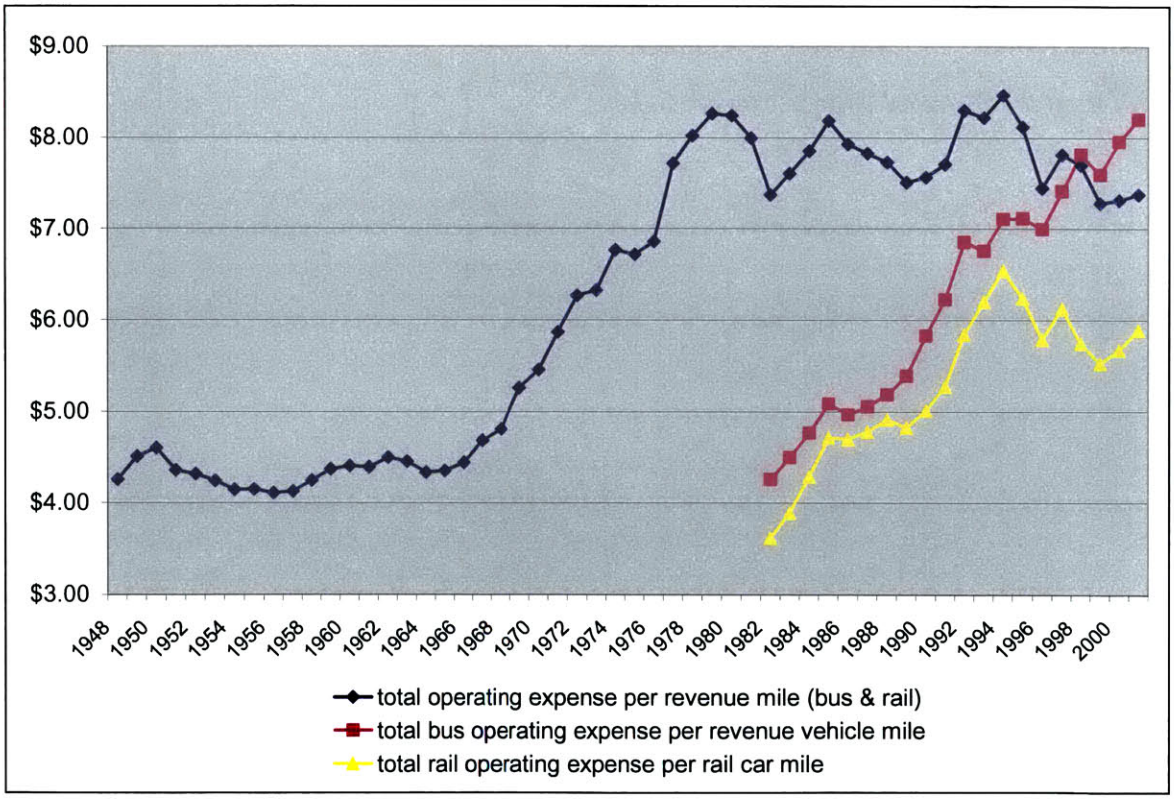
***Figure 4-6. CTA's Unlinked Trips per Revenue Mile***




Source: Savage & Peterson CTA Database.

A valuable metric for understanding service efficiency measured here as operating expense per revenue mile, also known as the unit cost. Calculating unit costs can be challenging because bus revenue vehicle miles are not the same as rail revenue car miles.[19] Furthermore, it is difficult to separate bus and rail expenditures because of the complexity of allocating joint costs. The first line in Figure 4-7 aggregates rail and bus car miles with a caveat that the relative mix of bus and rail revenue miles has changed dramatically over the 54-year period. Since the early 1980s, the Federal Transit Administration has required CTA to submit separate estimates for bus and rail expenditures for the Section 15 reports, and these separate estimates are also presented in Figure 4-7. From 1982 until 1994 bus costs per revenue mile and rail costs per revenue mile are essentially parallel. This may be accurate, or it may reflect methodological issues with joint cost allocation. Since 1994 bus costs per revenue mile have greatly exceeded rail. Efficiency gains on the rail system in the late 1990s came from real productivity gains, such as implementing automatic fare collection and single-operator trains. The increasing bus unit costs are likely the result of increased automobile congestion, which has driven up operating expenditures. While additional research is needed to confirm these trends, it does suggest a potential vulnerability for the CTA to consider.

***Figure 4-7. CTA's Operating Expense per Revenue Mile (in 2001 dollars)***

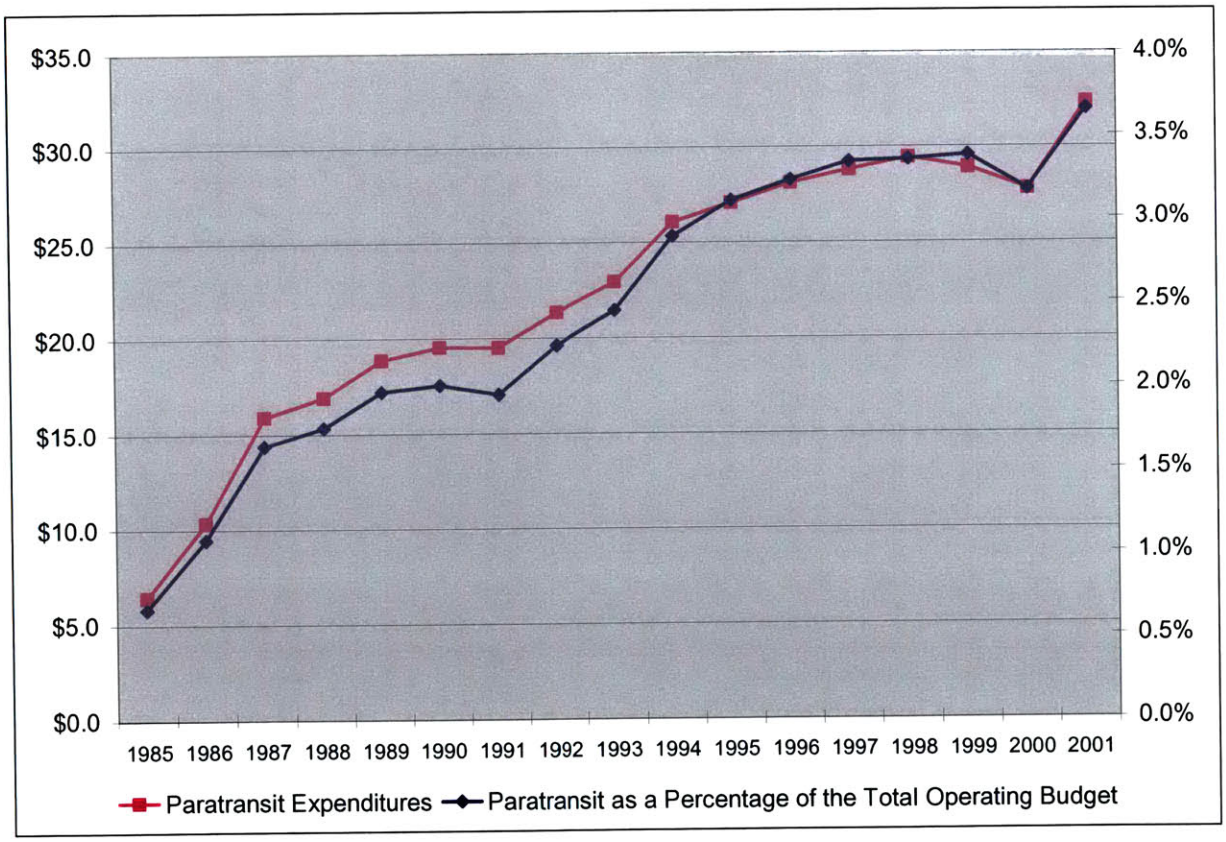



Source: Savage & Peterson CTA Database.

[19] Converting train revenue miles to revenue car miles is an effort to facilitate comparisons between rail and bus; however, this comparison can be misleading because they have very different labor structures.

Paratransit expenditures represent the fastest growing cost at the CTA. Between 1985 and 2001, paratransit has grown from 0.7 percent to 3.7 percent of CTA's overall operating budget. In real dollars, this has meant a $25.9 million increase in annual expenditures (see Figure 4-8). While these numbers are still only a small fraction of CTA's overall expenditures, they are of concern for two reasons: rate of change and cost recovery. While still relatively small, paratransit expenditures are increasing rapidly because of a strong latent demand for this type of services. Furthermore, because of the way that the region calculates its cost recovery ratio, paratransit places pressure on the rest of the system to increase productivity. This constraint may prevent the agency from providing lower performing routes in other parts of the system. The Americans with Disabilities Act requires that transit agencies provide paratransit services within a ¾ mile buffer of their fixed route service. This vital service allows people with disabilities to become independent and productive members of society. Rather than looking for opportunities to curb paratransit expenses, the region should consider ways to expand these services. This would require shifting the cost of paratransit away from the individual service providers and modifying the system-wide cost recovery ratio to acknowledge the low cost recovery nature of this type of service.

***Figure 4-8. CTA's Paratransit Expenditures from 1985 to 2001 (in 2001 dollars)***

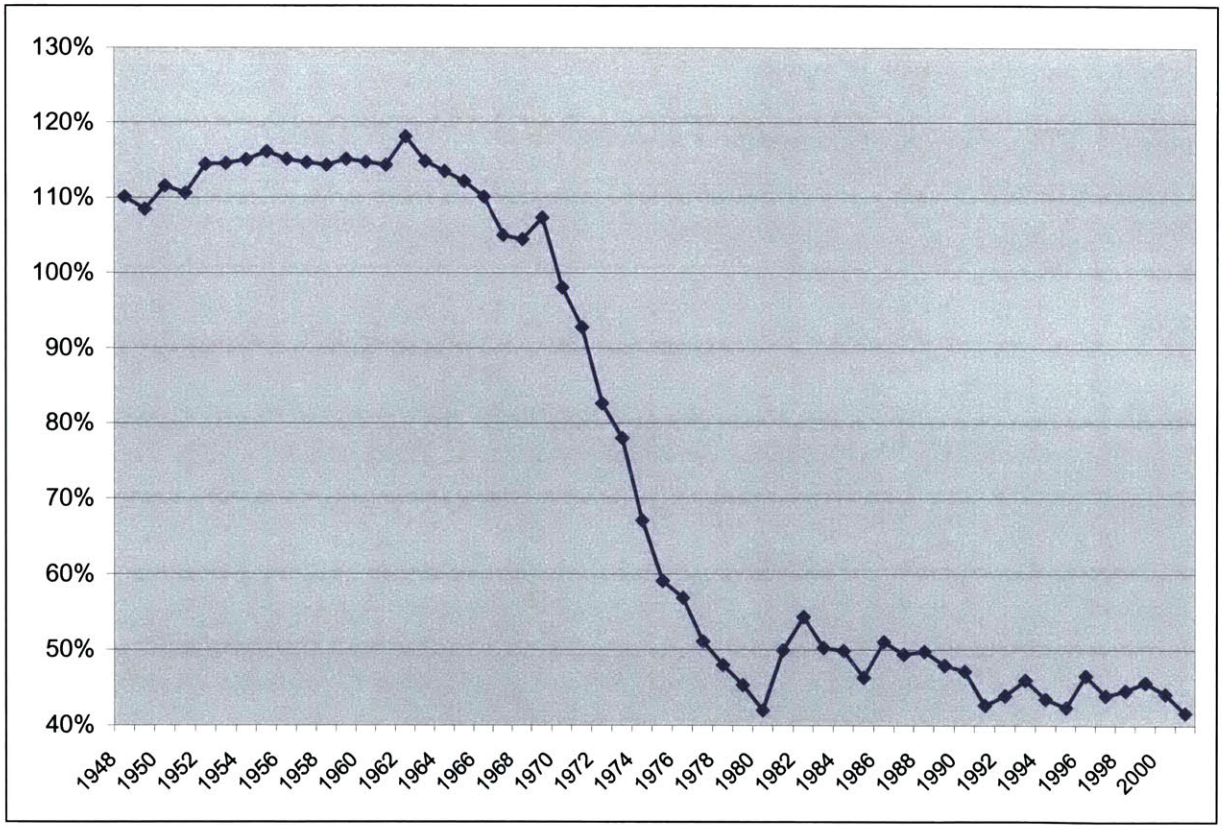



Source: Savage & Peterson CTA Database.

## 4.2 REVENUE

System-generated revenue accounts for 52 percent of CTA's annual operating budget.[20] Fare revenue represents the largest component of system revenue, approximately 80 percent (Chicago Transit Authority, 2003b). The fare box recovery ratio for the system is calculated by dividing annual passenger revenues by annual operating expenses. This metric is different than the cost recovery ratio that RTA calculates, because it does not consider non-fare revenue (such as advertising concessions) or municipal contributions. During its early history, CTA operated at a profit, and passenger revenues exceeded operating costs (see Figure 4-9). Between 1969 and 1980, fare box recovery ratio declined sharply from 107 percent to just 42 percent. During the last 10 years, the fare box recovery ratio has fluctuated between 42 and 47 percent.

***Figure 4-9. CTA Fare Box Recovery Ratio from 1948 to 2001***




Source: Savage & Peterson CTA Database.

In nominal dollars, the CTA base fare has ranged from 13-cents in 1948 to $1.75 in 2004. Since 1952, the CTA has charged the same fare for bus and rail trips. In 2001 dollars, the lowest base

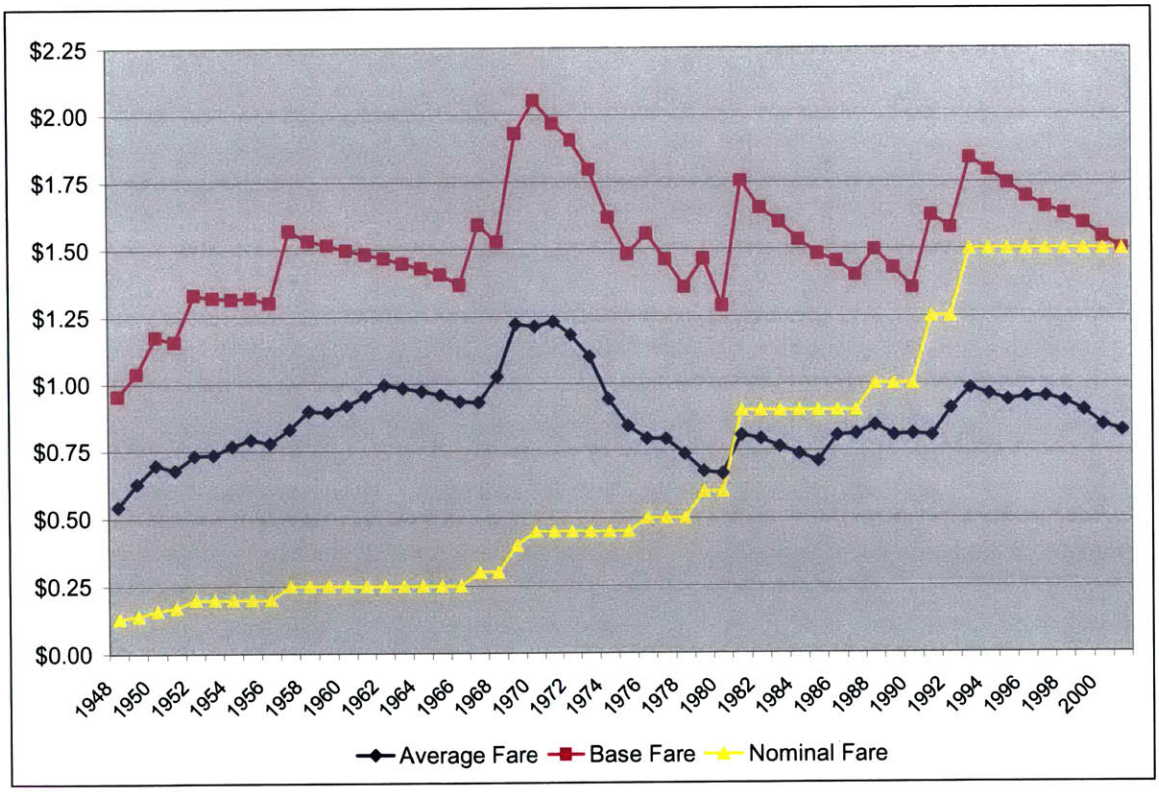
[20] In calculating this percentage, the CTA considers the reduced fare subsidy and contributions from local government as system generated revenue.

fare occurred in 1948 ($0.96), and the highest base fare occurred in 1970 ($2.05). The average fare, also known as revenue per passenger, is calculated by dividing the total fare revenue by the number of unlinked passenger trips. As Figure 4-10 indicates, average fare trends parallel base fare trends. Average fares are lower than base fares because of reduced fares and transfer discounts. Monthly, weekly, and daily pass programs, which were first introduced in 1978, have also served to reduce the average fare relative to the base fare.

Until June 1961, the CTA provided free transfers. Today, rail-to-rail transfers are free if the rider stays within the fare gates, while the agency charges a 25-cent surcharge for bus-to-bus, bus-to-rail, and rail-to-bus transfers. From 1992 through 2003 the CTA base fare was $1.50, on January 1, 2004 the CTA raised the base fare to $1.75. The CTA also offers reduced fares, currently 85 cents, to the following groups (Chicago Transit Authority Website, 2004):

- Children under 12;
- Adults over 65;
- Riders with disabilities;
- Attendants accompanying people with disabilities; and
- Elementary and high school students (between 5:30 AM and 8:00 PM).

***Figure 4-10. CTA Average, Base and Nominal Fare from 1948 to 2001***

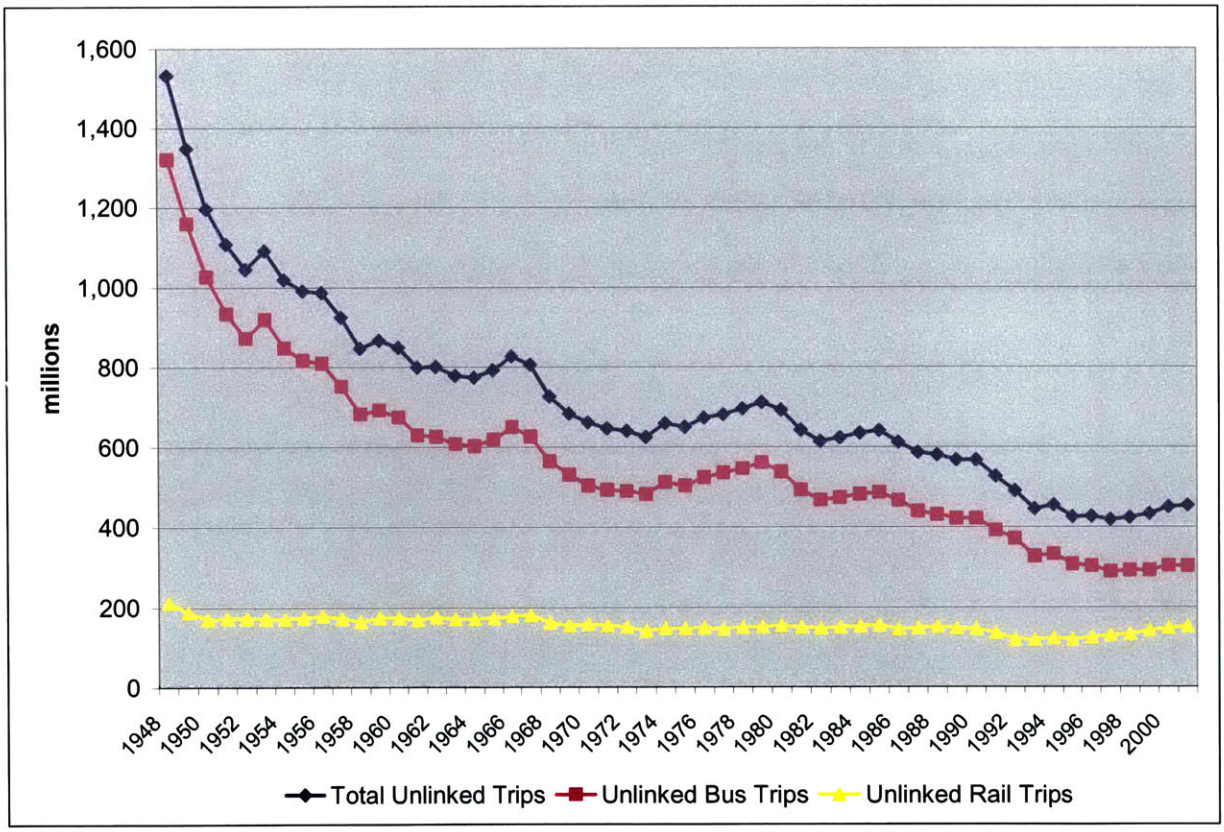



Base and average fare are presented in 2001 dollars.

Source: Savage & Peterson CTA Database.

Annual passenger revenue peaked in 1949, but remained relatively high until 1970. This is particularly remarkable, considering that the CTA lost approximately 871 million annual riders between 1948 and 1970. As shown in Figure 4-11, most of these riders came from the bus system, which lost 817 million annual riders during that same time period. "The rail system's ridership is much more inelastic as it services longer trips (averaging 6 miles) on radial routes to the CBD, whereas the bus system has much shorter trips (averaging 2 miles) in the neighborhoods where walking and the automobile are more effective competitors" (Savage, 2004). High parking prices in Chicago's CBD also contributed to rail ridership retention, as did the fact that the rail system is isolated from automobile congestion because it operates on a separate right-of-way.

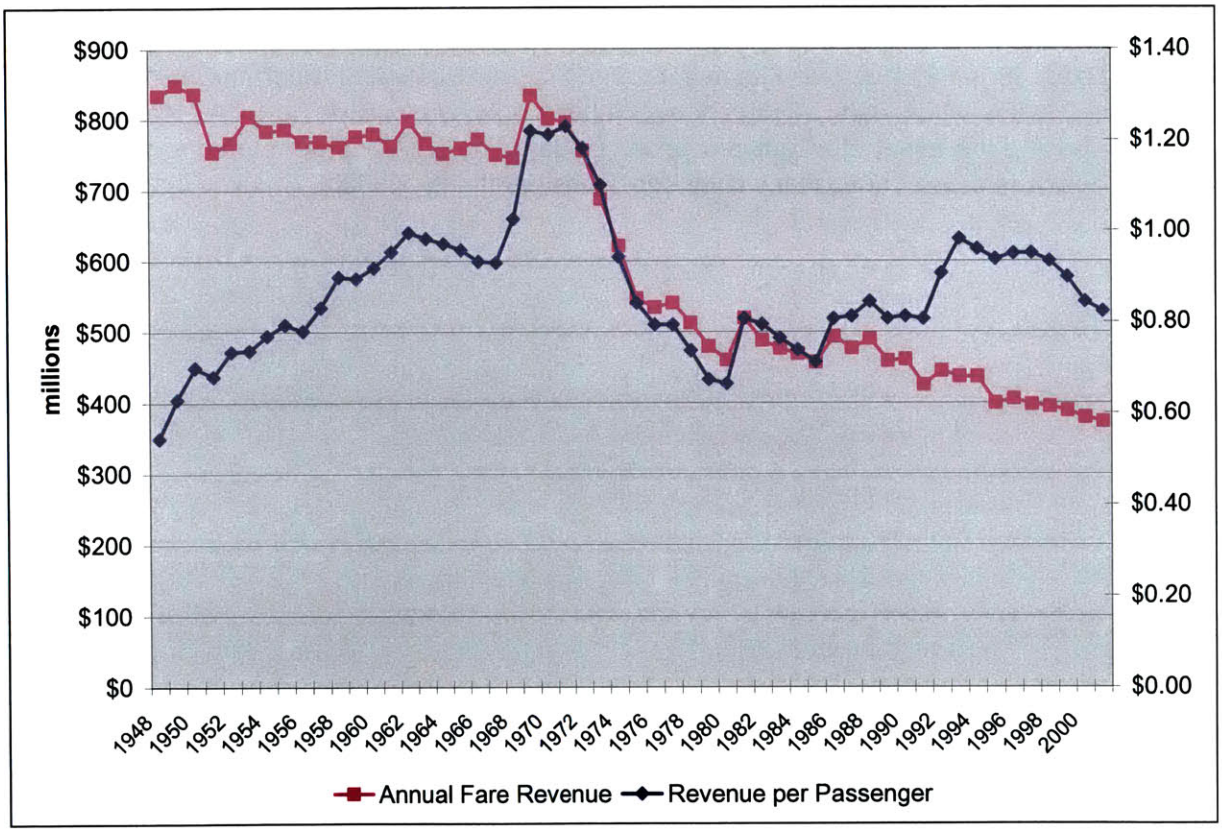
***Figure 4-11. CTA Changes in Unlinked Passenger Trips from 1948 to 2001***




Source: Savage & Peterson CTA Database.

In the early part of its history, CTA had high ridership, so each individual passenger paid relatively little. As passenger trips began to decline, the CTA compensated with fare increases, which lead to high average passenger fares. The average price per passenger peaked in 1971 at $1.23 (in real dollars). In the 1970s, the CTA fare increases did not keep pace with inflation causing passenger revenues to decrease dramatically (see Figure 4-12). This may have been a conscious decision by agency management, since fare increases had exceeded inflation in the previous decade. The CTA was able to limit fare raises while maintaining service levels, using new subsidy sources to cover the increasing operating deficit. Since the 1970s passenger revenues have continued to decline, but not nearly as rapidly as in previous periods. In 1980, the average passenger fare was 66 cents. In 1994 the average passenger fare reached 98 cents, but declined in recent years to 82 cents in 2001.

***Figure 4-12. CTA Total Revenue from Fares compared with Revenue per Passenger (in 2001 dollars)***




Source: Savage & Peterson CTA Database.

While not as significant as passenger revenue, the CTA does rely on non-fare revenue at the margins. In 2002, the CTA reported the sources of non-fare revenue shown in Table 4-1.

***Table 4-1. 2002 Non-Fare System Revenues (in millions)***

| Source | Revenue |
|---|---|
| Advertising, Charter, & Concessions | $20.4 |
| Investment Income | $10.7 |
| Other | $22.5 |

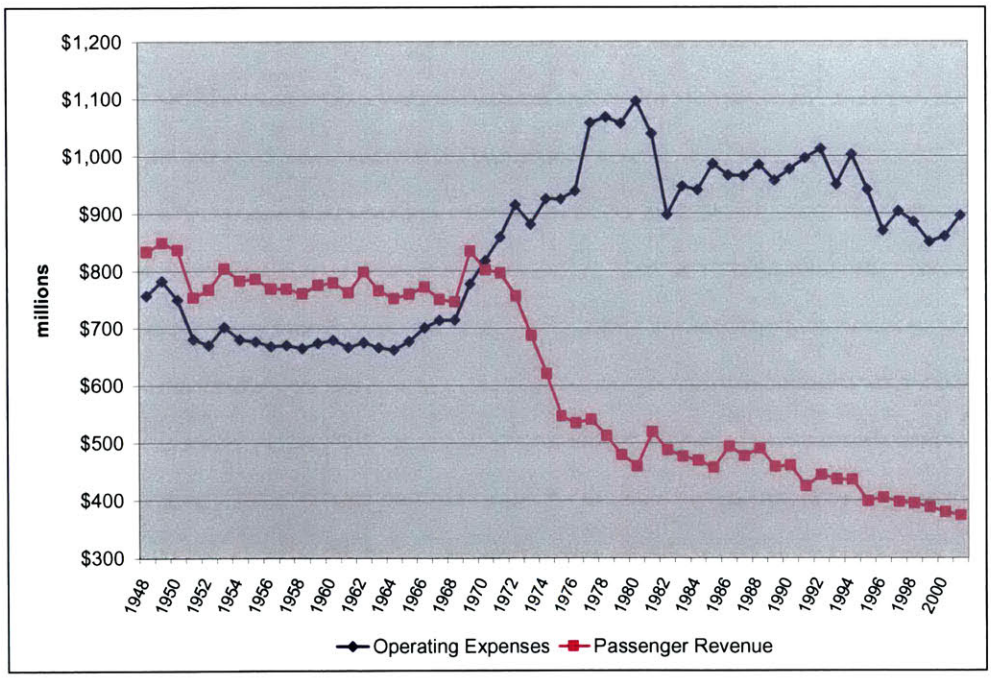
Source: Chicago Transit Authority, 2004.

The row labeled other resources includes resources generated from leveraged lease transactions. The CTA began a program of leveraged lease transactions in 1995. This program consists of the CTA selling a capital asset, such as the green line, to investors and than leasing the asset back for an annual fee. The investors obtain a tax benefit through the ownership of a depreciating asset, which is (in effect) shared with the agency by providing CTA a cash infusion and than leasing the asset at a reduced price. To date, the CTA has generated approximately $38.7 million from these transactions (Chicago Transit Authority, 2003b).

## 4.3 Operating Subsidy

The CTA requires an operating subsidy because operating expenses exceed agency revenue. Figure 4-1 shows that the gap between CTA's total operating expenses and passenger fares has increased over time. The CTA did not receive operating support until 1965, although from 1958 to 1964 the agency made three unsuccessful requests to the state legislature for small operating subsidies (Savage, 2004). Beginning in 1965, the state began providing small subsidies to reimburse the CTA for providing reduced fares to children and seniors, however, substantial subsidies did not begin until 1971.[21] Early subsidies came from local and state sources, but in 1976 the CTA also started receiving federal operating subsidies, as part of the Urban Mass Transit Program. The creation of the RTA in 1974 introduced the first opportunity for regional subsidy. RTA generated operating subsidy from a 5 percent tax on gasoline from 1977 to 1979. During this period, the region also benefited from a state return of 3/32 of the sales tax generated in the region, $14 per vehicle of the City of Chicago's vehicle registration fee, and a $5 million contribution from the City of Chicago and Cook County. Due to suburban hostility, the RTA replaced the gas tax with a differential sales tax of 1 percent in Cook County and ¼ percent in the five collar counties beginning in 1979 (Allen, 1996).

***Figure 4-13. CTA's Total Annual Operating Expenditures Compared with Total Annual Passenger Revenue from 1948 to 2001 (in 2001 dollars)***

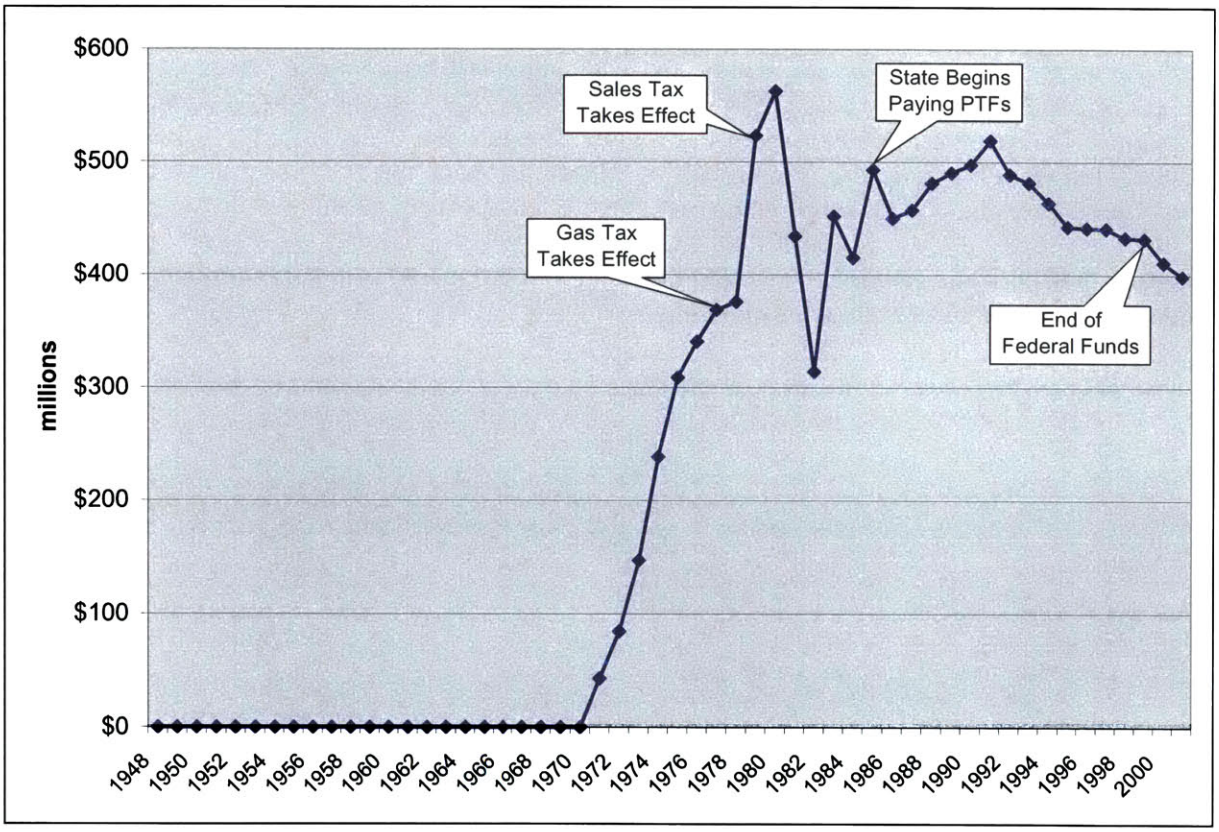



Source: Savage & Peterson CTA Database.

[21] The reduced fare reimbursements were initially recorded as agency revenue, and therefore do not show up in Figure 4-14.

In real dollars, operating subsidies peaked in 1980 at $563.1 million and then plummeted over a two-year period to $313.7 million (see Figure 4-14). During this two-year period, federal subsidies fluctuated by approximately $64 million and regional subsidies fluctuated by an additional $213 million. From 1991 to 2001, real subsidies to the CTA declined by approximately $120 million. A shrinking sales tax base in the City of Chicago and the decline of federal subsidies contributed to this negative trend. Since 1991 CTA subsidies have contracted, despite the fact that the agency's operating deficit has increased. The declining subsidies are a direct result of the poor policy decisions made during the 1979 formation of the RTA and the 1983 RTA Act Amendments, which failed to recognize the demographic shifts in the region and the ephemeral nature of the federal operating subsidies.

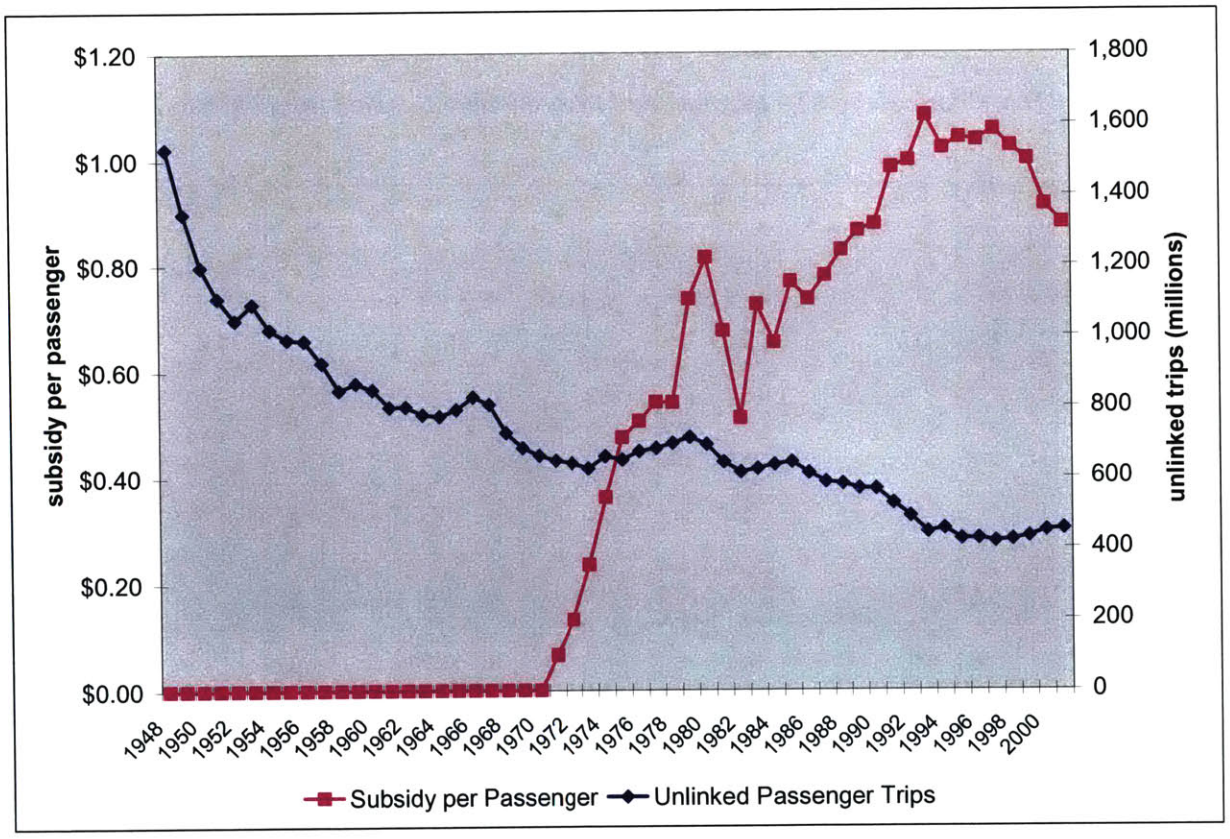
***Figure 4-14. CTA's Annual Subsidy from 1948 to 2001 (in 2001 dollars)***




Source: Savage & Peterson CTA Database.

Another way to evaluate the CTA's subsidy levels is to examine subsidy per unlinked passenger trip, which is a measure of cost effectiveness (see Figure 4-15). The graph of subsidy per unlinked passenger trip closely parallels the graph of total subsidy because total subsidy has fluctuated over time, while the changes in unlinked trips have been less volatile. Unlinked passenger trips have remained relatively constant since 1993, while subsidy per trip declined from $1.08 to $0.88.

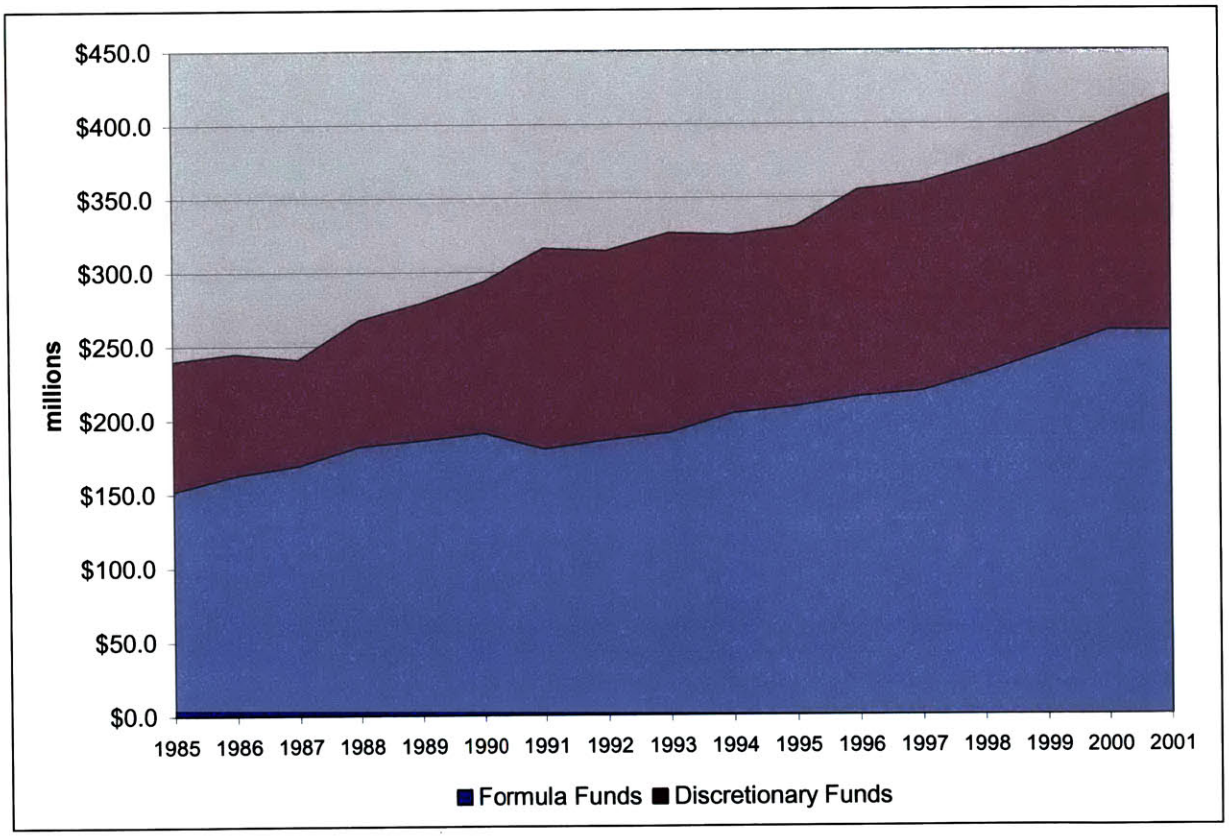
***Figure 4-15. Comparison of CTA's Subsidy per Trip and CTA's Total Unlinked Passenger Trips (in 2001 dollars)***




Source: Savage & Peterson CTA Database.

Beginning in 1979, the CTA's primary funding came from the RTA sales tax. This fund was augmented in 1985 as a result of the 1983 RTA Act Amendments, which introduced the public transportation funds. The majority of the sales tax (85 percent) is distributed by formula, while the public transportation funds are allocated at RTA's discretion. Because CTA's share of the formula funds does not cover its operating deficit, the RTA typically gives over 90 percent of its discretionary operating dollars to the CTA. Figure 4-16 shows the relative portion of formula funds and discretionary funds that CTA has received since 1985.[22] While the graph indicates that CTA's subsidy has almost doubled in real dollars, this growth has not been enough to offset the loss in federal operating subsidies. The graph also shows that the growth in discretionary funds has outpaced formula funds as a result of the City of Chicago's sales tax base growing at a slower rate than the rest of the region.

***Figure 4-16. CTA's Share of the RTA Formula and Discretionary Subsidy from 1985 to 2001 (in 2001 dollars)***

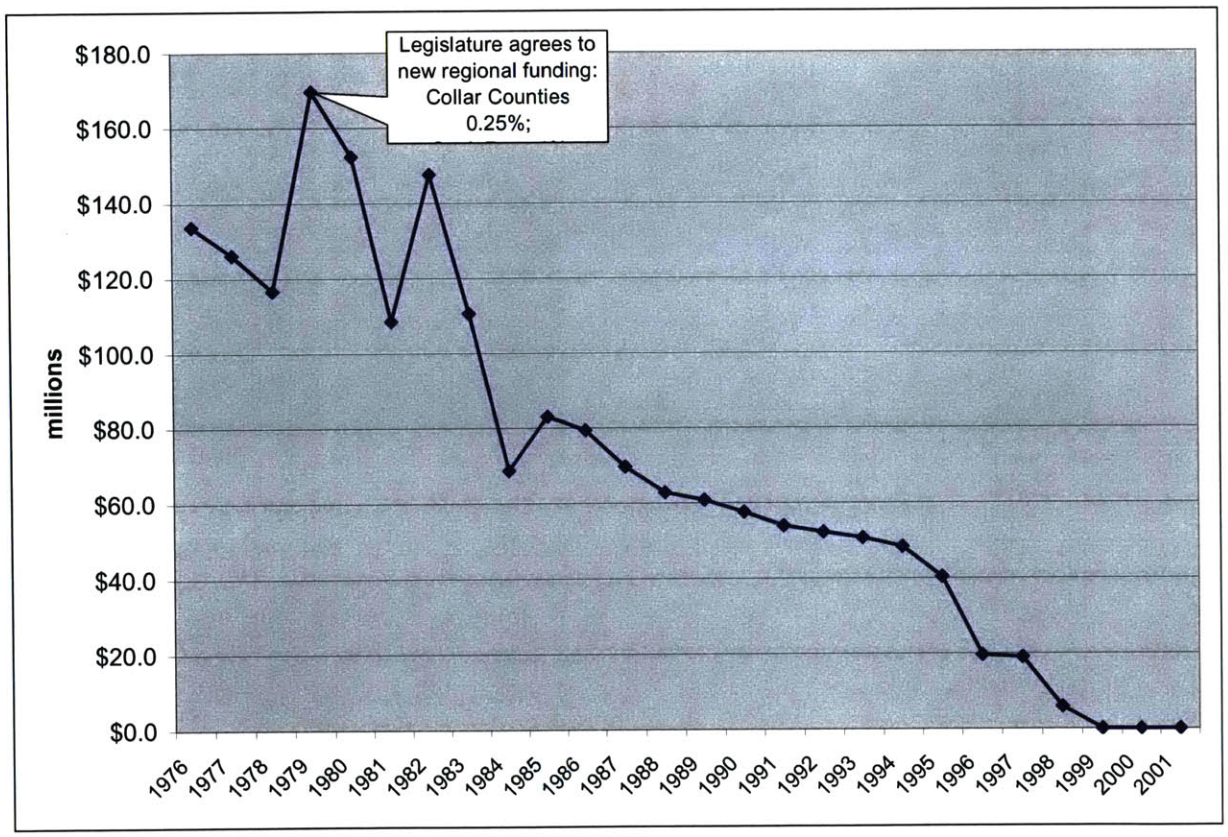



Source: Data assembled by the Chicago Transit Authority based on RTA Annual Reports.

[22] While the RTA Act Amendments were signed in 1983, the funding did not begin until 1985.

The growth in subsidy shown in Figure 4-16 does not tell the whole picture, because the growth in discretionary and formula funds has been used primarily to replace shrinking federal operating subsidies. Figure 4-17 shows that federal operating subsidies for CTA peaked in 1979 at $170 million. This heightened level of funding coincided with the revision of the region's transit funding, which established that the collar counties would pay ¼ percent and Cook County would pay 1 percent. The timing of the two transactions has led CTA sources to speculate that the collar counties shifted their funding burden to the federal subsidy. This short term planning has significantly contributed to the current funding challenges that the CTA faces. A better strategy would have been to use the extra money to stabilize fares or bring the regional system to a state of good repair. This would have partially shielded the region from subsequent events; beginning in 1998, the federal government stopped providing operating subsidies to large and medium properties.

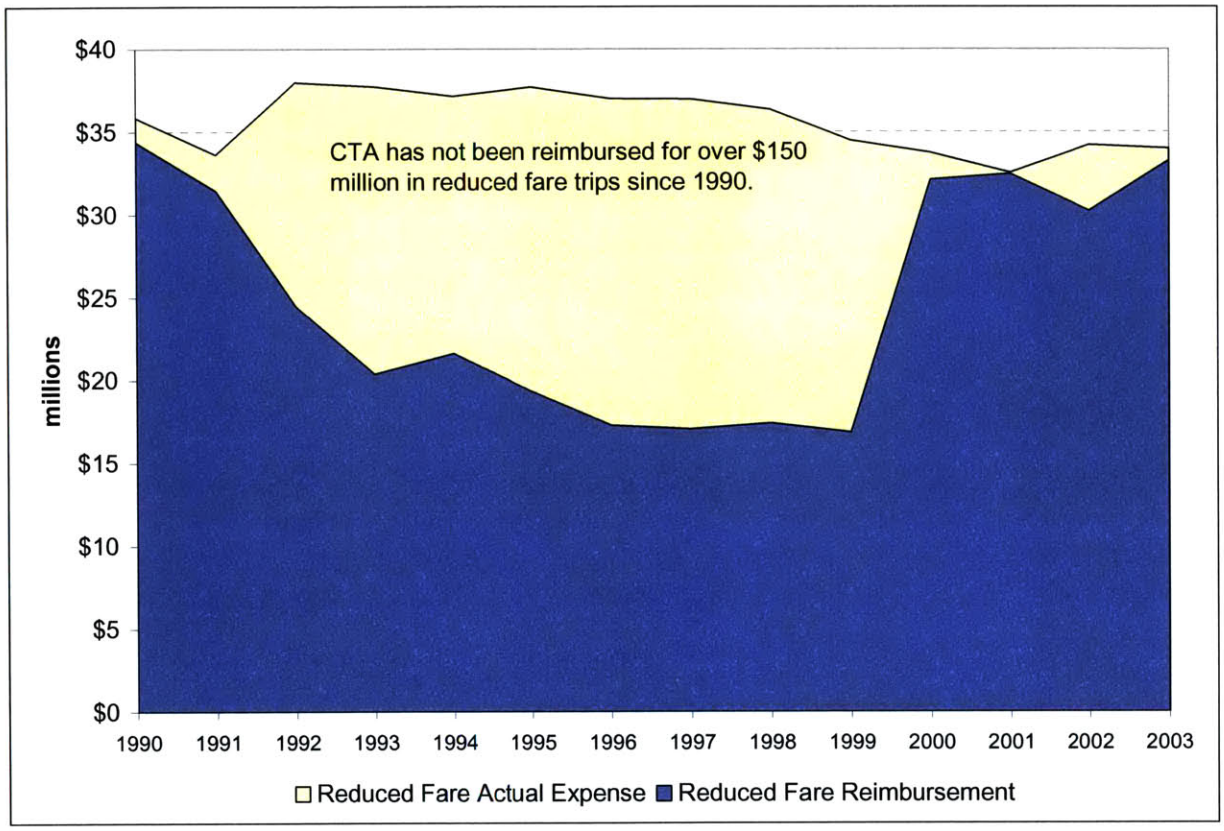
***Figure 4-17. Federal Subsidies to CTA from 1976 to 2001 (in 2001 dollars)***




Source: Data assembled by the Chicago Transit Authority based on RTA Annual Reports.

In addition to the public transportation funds and the sales tax funds, the CTA also receives subsidy in the form of reduced fare reimbursements. This money is appropriated by the legislature on an annual basis and is intended to offset the cost of providing reduced fares to children, seniors, and people with disabilities. As Figure 4-18 shows, the reduced fare reimbursements cover part, but not all of CTA's reduced fare expenditures.

***Figure 4-18. State Issued Reduced Fare Reimbursements to the CTA***




Source: Chicago Transit Authority, 2003.

Currently, the City of Chicago and Cook County provide an annual subsidy of $5 million. The RTA has also recently recognized the security that the City provides as part of their municipal contribution. The City's contribution helps to achieve the cost recovery ratio that the CTA must meet in order to receive RTA budget approval. Since the City's contribution essentially reduces the CTA's cost recovery burden, the City is enabling the CTA to offer lower performing services, with respect to cost recovery, than it would otherwise be able to sustain.

## 4.4 SUMMARY

When viewed as a set, these trend analyses show that CTA has survived with less and less subsidy over time, which has contributed to a dramatic decline in ridership and passenger revenues. The loss of federal operating subsidies had the biggest impact, but the problems with the funding formula also contributed to declining resources over time. The CTA appeared to be heading toward its present crisis in the mid-1990s, but were temporarily saved by productivity enhancements and the economic boom. The current crisis will not likely be averted.

Clearly the CTA experienced a dramatic increase in the operating deficit during the 1970s. This may have been caused by the sudden availability of subsidy, or it may have been caused by contractual agreements and deferred maintenance in the previous two decades. Since 1979 the agency's total operating costs have steadily declined. However, segments of the total cost, such as paratransit and healthcare, appear to be rising faster than inflation. There is also some evidence that the unit costs for bus (operating expense per revenue mile) may be increasing faster than inflation.

# 5. FUNDING ALTERNATIVES

This chapter considers a variety of funding schemes that the CTA could consider to enhance agency resources and address some of the negative trends identified in Chapters 3 and 4. While increased subsidy is the focus of this report, it is not the only avenue available to the CTA. Productivity enhancements, such as contracting out low-performing routes or introducing signal priority for buses should also be investigated as complementary financial management tools. Alternatives discussed here range from seeking enhanced federal funds to imposing new taxes at the city, county, and/or regional level. Eleven funding alternatives were identified as part of this research.

Section 6.1 briefly discusses each mechanism and considers how it could benefit both the Chicago Transit Authority and the region as a whole. Three of the funding mechanisms are evaluated in further detail using the Funding Evaluation Framework presented in Section 1.3. These alternatives are:

- Increasing collar county contribution
- Including prepaid transit passes as part of automobile registration
- Implementing a parking tax on off-street commercial spaces

The Funding Evaluation Framework focuses on four main categories: revenue potential, incidence, benevolent/malevolent effects, and political feasibility. A series of defining questions are presented within each section to furnish details for each framework category. These questions explore a variety of key issues including equity impacts, effectiveness, and anticipated stakeholder responses.

## 5.1 POTENTIAL ALTERNATIVES

The following alternatives represent potential funding opportunities for the Chicago Transit Authority. This section presents a brief discussion of the anticipated benefits and drawbacks of each funding stream. The following sections analyze Alternatives 1 through 3 in further detail.

- **Alternative 1.** Increasing collar county contribution
- **Alternative 2.** Mandatory transit passes with automobile registration
- **Alternative 3.** Parking tax on off-street commercial spaces
- **Alternative 4.** Shifting labor benefits to the state
- **Alternative 5.** Maximizing non-fare revenue
- **Alternative 6.** Supplemental gas tax
- **Alternative 7.** Tourism tax
- **Alternative 8.** Tax increment financing applied broadly to the CBD

- **Alternative 9.** Campaign for Resources in the Federal Transportation Reauthorization
- **Alternative 10.** Modify the structure of the existing sales tax
- **Alternative 11.** Seek new partners

## Increasing collar county contribution

Currently, the five collar counties surrounding Cook County contribute significantly fewer resources to the regional transit system than the City of Chicago or suburban Cook County. This is problematic because they have higher incomes per capita and are relatively more expensive to serve because providing service in low density areas costs more per ride than denser urban areas. DuPage and Lake Counties are particularly well off and enjoy a level of service on par with suburban Cook County. Despite these facts, they pay one quarter of what Cook contributions. The apparent mismatch between the collar counties' ability to pay and their actual contributions has spawned a recent interest at the CTA to work with the state legislature to increase the collar county contribution. The new revenue that could be generated from the collar counties depends on how much the sales tax is increased and whether or not the current funding formula is changed. This report considers the revenue potential if the sales tax is increased to ½ percent, ¾ percent and 1 percent.[23] It also considers the consequences of maintaining the public transportation funds at their current rate (25 percent state match) or reducing the public transportation funds to a 20 percent state match. Finally, this report considers the resources that could be generated if DuPage and Lake increase their contributions, while the other collar counties remain at ¼ percent. Section 5.2 explores this alternative in greater detail.

## Including Transit passes with Automobile Registration

Presently, automobile owners pay $78 per year to register each vehicle. Adding a transit fee to the automobile registration represents a creative way to increase transit ridership, while simultaneously increasing transit resources. In exchange for paying the fee, the recipients would receive a transit pass worth the equivalent of the fee to be used on either CTA, Pace, or Metra. Attaching a transit fee to the automobile registration is appealing both because of the interrelationship between the vehicle and transit systems and because of the potential for the fee to increase ridership. The revenue generated would depend on how high a fee the region was willing to accept. For the program to work regionally, RTA would have to complete its mission to introduce fare integration into the region. Currently, CTA and Pace are integrated, but Metra is not. Section 5.3 explores this alternative in additional detail.

[23] In the option where the collar county sales tax for transit is increased to 1 percent this thesis assumes the state would implement a mechanism similar to the one it uses in Cook County. This would mean that the collar counties would actually pay a ¾ percent sales tax, and the state would divert the ¼ percent countywide sales tax that now goes to the collar counties to the RTA.

## Parking tax on off-street commercial spaces

An ad valorum tax collects a percentage of the revenue generated from fees paid for parking services. A flat parking tax collects revenue based on the number of parking spaces regardless of whether or not the owner charges parking fees. Currently, two distinct ad valorum parking taxes exist in downtown Chicago – one administered by Cook County and the other administered by the City of Chicago. In 2002 the county tax generated approximately $31 million and the City of Chicago's parking tax generated approximately $67.5 million. Through creative changes to the existing taxes, these parking resources could be increased and earmarked for transit. This report considers the revenue potential of adding an off-street commercial parking flat tax to the existing ad valorum tax and/or replacing the existing tax with a higher flat tax. It also considers the potential for expanding the tax to off-street commercial spaces citywide, countywide, or region-wide. Section 5.4 discusses this funding alternative in greater detail. If adopted, mechanisms must be put in place to increase the flat tax over time, or its effectiveness will erode with inflation.

## Shifting Labor Benefits to the State

From 1971 to 1980 transit labor fringe benefits, include healthcare, vacation and sick days, and pension funding, increased from 20 percent to 46 percent of real wages (Savage, 2004). In recent years, consistent with national trends healthcare is once again increasing rapidly and placing an added burden on the agency's unit cost. Over the past five years, health care costs have increased 73 percent, outpacing "the rate of inflation more than five-fold" (Chicago Transit Authority, 2003b). This cost was partially offset by increasing employee's share of health insurance costs, but any further increases are likely to meet union resistance.

Providing good employee benefits is a challenge that all public agencies face. If the state absorbed the responsibility of providing healthcare, it would remove the burden from the individual agency and temper labor's ability to negotiate for this benefit. Furthermore, the state may be able to achieve economies of scale by negotiating favorable contracts with insurance providers. This funding strategy would benefit transit throughout the region because the money used for healthcare could be better spent on improved service and or reduced passenger fares. If the state shifted a portion of the Public Transit Funds to pay for healthcare costs, the CTA would not realize immediate benefits; however, since healthcare is expected to continue increasing faster than inflation, significant future increases could be diverted. In the past, the unions would not have supported such a shift in responsibility between the agency and the state. However, they may be more willing to such a change in light of the fact that the CTA has a decreasing ability to pay for increasing healthcare costs.

## Maximizing Non-Fare Revenue

While fares make up approximately 80 percent of the system generated revenue, the Chicago Transit Authority also earns some revenue from sources such as advertising and concessions (Chicago Transit Authority, 2003b). In the future, the CTA could increase non-fare revenues by thinking creatively about the provision of complementary services. Recently, the CTA has

considered opportunities to collaborate with the airport on package delivery. This is an example of an innovative way to cross-subsidize transit. In 2003 the CTA initiated a creative program to reduce its bus shelter costs by creating a deal with an outdoor advertiser to provide shelters in exchange for the right to advertise in these shelters. The City currently manages this program and benefits from the surplus revenue generated by the contract, customers benefit from cleaner and more numerous shelters. Other opportunities include expanding the leveraged lease transactions, increasing concession contracts, and raising parking prices. Despite these opportunities, the ability of CTA to significantly increase their non-fare revenue is limited. CTA is already a leader in pursuing non-fare revenue and federal tax policies are expected that may eliminate some of these revenue opportunities in the future.

## Supplemental Gas Tax

Currently, the RTA has the authority to levy a sales tax or a gas tax but it cannot do both simultaneously. If the legislature could be convinced that an additional gas tax was warranted, significant revenues could be generated. CTA staff estimates that one penny of gas tax in the region would generate $30 million in revenue (CTA estimates based on data provided by the Illinois Department of Revenue) and a gas tax is beneficial for all of the reasons cited in Section 2.3 including low visibility to the consumer. A supplemental gas tax would probably be most appealing if it went towards a special cost such as paratransit, since the sales tax is perceived by some as sufficient to fund traditional fixed route service. Removing paratransit from the cost recovery ratio would free up resources for other transportation services and help the CTA meet its annual expectations because paratransit is significantly less cost effective.

## Tourism Tax

Since tourists in Chicago tend to rely on the CTA rather than renting an automobile, an argument could be made for a CTA tourism tax. Tourism taxes on hotels, rental cars, and tourist destinations are very appealing to politicians because they are highly exportable and do not typically generate anti-tax opposition. A tourist tax could be made even more appealing if a portion of the revenue were used to create packages that appealed to tourists and to create partnerships between the CTA and local hotels. If these relationships were established the CTA would also benefit from increased ridership, especially during the summer months when tourism is high, but ridership tends to slump. To evaluate this revenue stream, the CTA would have to analyze current taxes on rental cars and hotels and would also have to approach the tourism department and attempt to partner.[24]

## Tax Increment Financing Applied Broadly to the CBD

Tax increment financing earmarks increases in property tax revenue to fund capital investments or services. As traditionally implemented, it calls on current property owners to pay for

[24] The CTA should also consider that taxi interests may attempt to block collaborations between transit and tourism.

improvements that will spur new development and contribute to the vitality of the neighborhood. Scholars who subscribe to the beneficiary principle support tax increment financing because those who stand to benefit most directly from a project bear the cost. This financing tool is typically used for capital projects and has been criticized by transportation policy experts such as Fred Salvucci because it has the potential to turn natural allies of transit into enemies. Businesses that might have otherwise lobbied for increased transit investment begin to support the cheapest alternative or worse, project elimination. One way to avoid this political problem is to earmark a portion of revenue from future economic development in the entire high-transit downtown district. This type of funding could be applied to the Circle line proposal and/or the proposed improved airport link and would help the agency address the Federal Transit Administration's requirement that the agency secure operations funding before they commence a capital project. This funding alternative has not been tested and requires additional research to determine the following:

- What percentage of new economic development should be attributed to the transit project?
- How large a catchment area will benefit from the proposed project?
- Will the city be able to accommodate the need for increased services if future tax revenues are earmarked for transit?
- What if fewer funds are generated than anticipated?
- Is there enough political leadership to earmark future funds?
- Will the FTA recognize potential tax revenue as an operations funding source?

## Campaign for Resources in the Federal Transportation Reauthorization

In the coming year, the Congress will most likely reauthorize the federal transportation bill. In the last reauthorization bill (known as TEA-21) the U.S. legislature eliminated transit operating subsidies. At the time, they indicated that more money would be available for preventative maintenance. Legislators tend to prefer funding capital projects over operations because they are more likely to be viewed by constituents as a political success. .

Losing transit operating funds has been a serious concern for transit providers. Transit operators of all sizes stand to benefit from new operations subsidies and a collective campaign could yield positive results. Alternatively, the CTA could try to get an operations demonstration project funded. Demonstration projects are often considered pork barrel projects, because state representatives use them to circumvent the regional planning process to invest in their specific communities. However, they also represent an opportunity to receive earmarked funds for innovative transportation projects. Providing prepaid transit passes to automobile owners is an example of an innovative project that could capture the imagination of Congress. Implementing a progressive paratransit system also lends itself to demonstration funding. While there is no

precedent of demonstration projects for operations, the CTA has been successful in the past at pushing boundaries and securing federal funding for innovative programs.[25]

### Modify the Structure of the Existing Sales Tax

Currently, the RTA sales tax draws a portion of the proceeds from retail sales and a second portion of the proceeds from purchases made outside Northeastern Illinois, but used in the region. While the region typically assumes that Cook County pays a 1 percent sales tax, for many categories of the sale tax they actually pay ¾ percent, with the state sales tax resources making up the difference. The CTA should consider using the state's unrecognized contribution as an argument for increased discretionary and decreased geographic funding. They may also use it to justify increased state presence on the RTA Board. The challenge of this strategy is to determine a simple way to explain the problem to decision makers. Nuances of tax structure make a big difference to the region, but do not typically impassion vocal stakeholder support. To fully understand the benefits of this funding alternative, the CTA would need to work with public finance and tax experts.

### Seek New Partners

Attaching the needs of transit to those of the larger transportation system represents a significant opportunity to leverage new subsidy. For example, the CTA could push the RTA to collaborate with the Chicago Department of Transportation (CDOT), Toll Authority, and the State Department of Transportation to lobby for new funds to bring the total transit and highway system to a state of good repair. The CTA could also look for opportunities to integrate its transit and motorist control centers. The region surrounding Houston Texas has significantly benefited from integrating its traffic, transit, and police control centers into one building. This type of collaboration achieves economies of scale, builds partnerships, and leverages resources. A third strategy would be to join forces with the highway lobby to campaign for an increase in the region's gas tax. A portion of this money could go to transit in general, or it could be earmarked for operations and other transit supportive projects, such as pedestrian and bicycle amenities. The highway lobby is highly skilled at increasing transportation investment. If they can be convinced that transit is a necessary coalition partner for the process, they may be willing to collaborate.

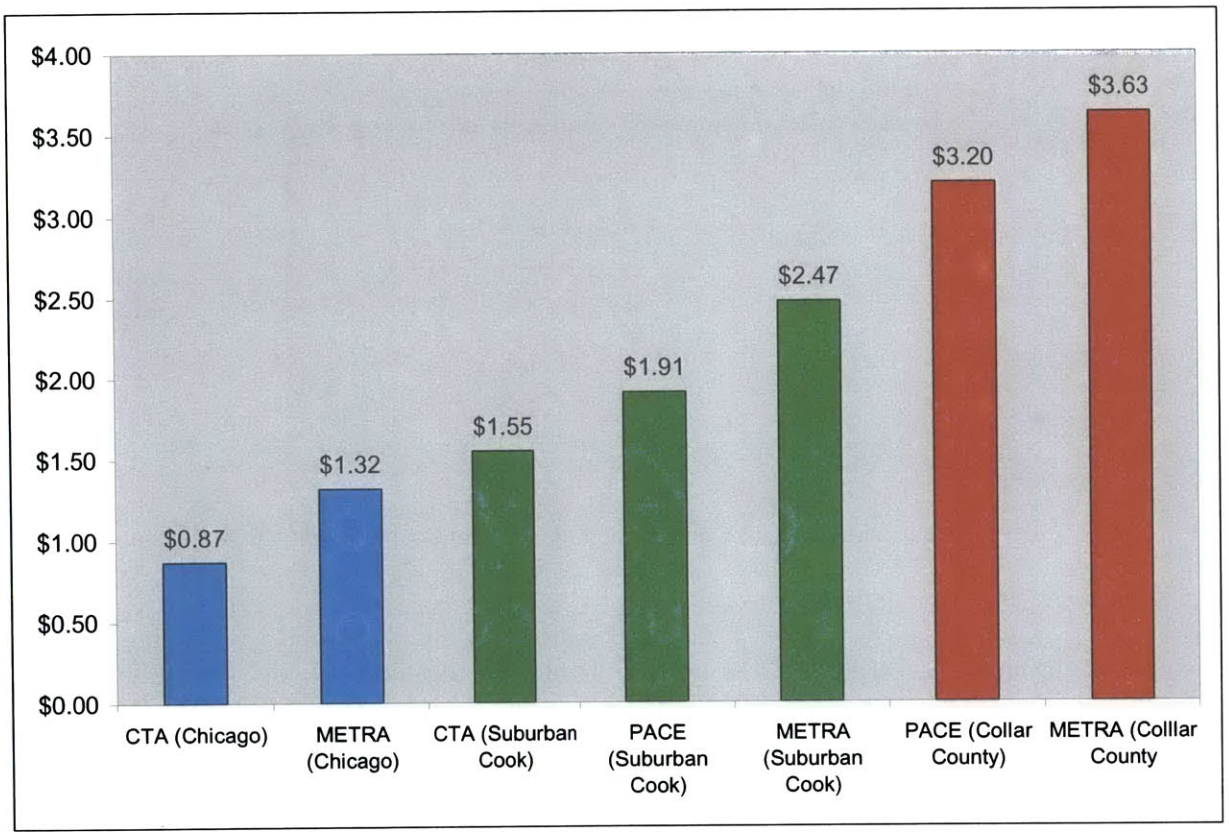
## 5.2 Increasing Collar County Contribution

Currently, the five collar counties surrounding Cook County contribute significantly fewer resources to the regional transit system than the City of Chicago or suburban Cook County. This compromises regional planning and stresses the transit system, because collar county trips require significantly more subsidy than do trips originating in suburban Cook or the City of

[25] As an example of the CTA's savvy financing ability, the agency's President, Frank Kruesi successfully campaigned to secure New Starts funding to rehabilitate an existing transit line. Previously, New Starts money had never been spent to replace existing facilities.

Chicago. In an internal analysis presented to the Governor's Regional Task Force, CTA estimated that on average, a collar county trip on Pace requires a $3.20 subsidy and a collar county trip on Metra requires a $3.63 dollar subsidy (see Figure 5-1). In a related analysis, the CTA estimated that suburban Cook provides approximately 50 million in annual subsidies to collar county Metra riders (see Figure 5-2).

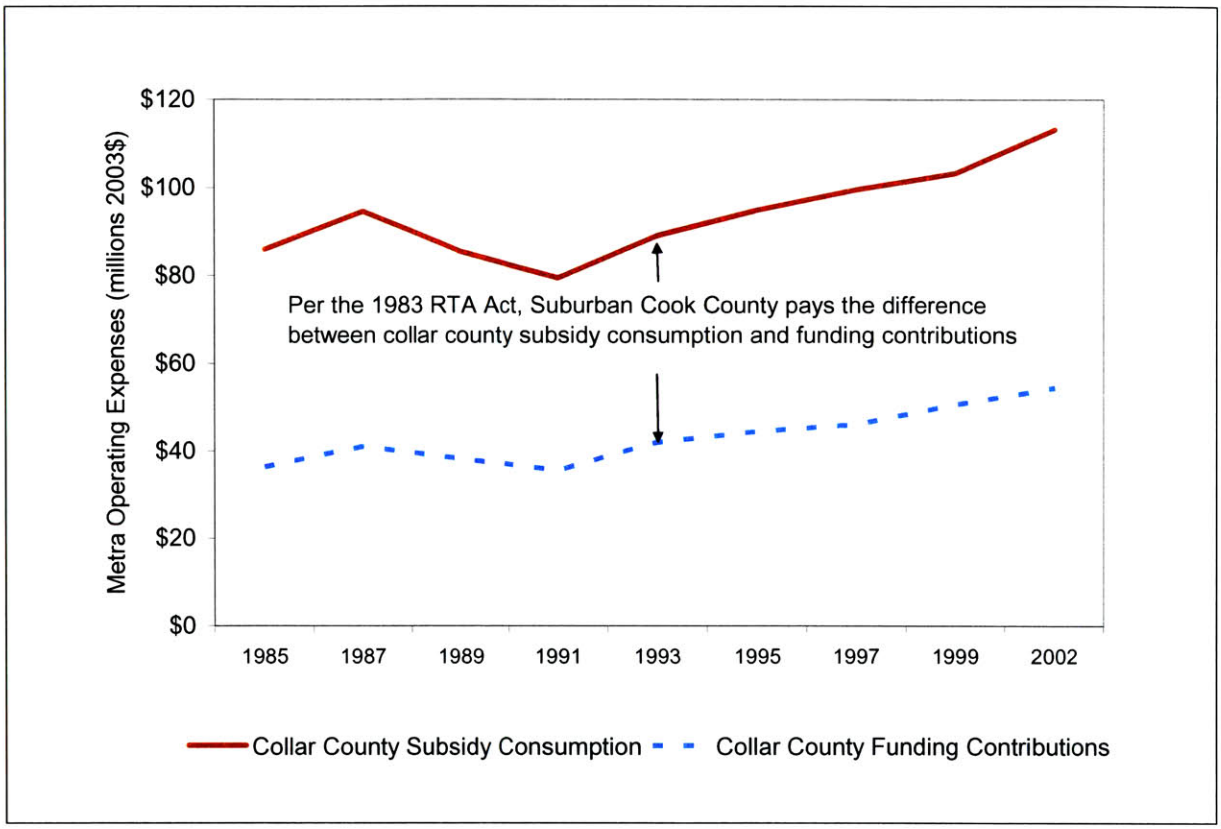
***Figure 5-1. Estimated RTA Subsidies per Trip (2003)***




Source: Presented by Frank Kruesi, President of the Chicago Transit Authority on March 5, 2004 in a presentation to the Regional Transportation Task Force.[26]

[26] Excludes paratransit and dial-a-ride. CTA: To estimate subsidies per bus trip, a route-by-route bus ridership and subsidy analysis was conducted to determine the respective suburban Cook and Chicago shares of operating subsidies and ridership. For rail estimates, subsidies estimated by multiplying estimated average trip distance (using origin-destination model on October 2002 ridership) by average cost per passenger mile. Rail and bus subsidies were then combined based on respective ridership. Estimated RTA subsidy from 2003 budget for all fixed-route trips is about $0.93. Metra: Subsidies estimated by multiplying estimated average trip distance (from 2002 ridership estimates) by average cost per passenger mile (2003 projections in 2004 Budget). Pace: 2004 Budget, 2nd quarter 2003 ridership and subsidies. To estimate subsidies per trip, a route-by-route ridership and subsidy analysis was conducted to determine the respective suburban Cook and collar county shares of operating subsidies and ridership.

***Figure 5-2. Metra Collar County Subsidy Consumption vs. Funding Contributions***




Note: Subsidy consumption estimated by multiplying ridership (from Metra ridership surveys) by estimated average subsidy per collar county trip. Collar county funding contributions comes from RTA annual budgets.

Source: Prepared by the Chicago Transit Authority using RTA Annual Reports, 2004.

Despite the fact that transit is more expensive in the collar counties, the City of Chicago and Suburban Cook County contribute the equivalent of a 1 percent sales tax to transit, while the collar counties contribute only ¼ percent. In interviews, CTA employees have speculated that the collar counties used the availability of federal funds in the late 1970s as an opportunity to shrink their financial commitment to regional transit. RTA employees have suggested that suburban frustration at escalating CTA deficits in the 1970s, fueled by very large labor agreements perceived as "political," led to the current sales tax percentages.

From CTA's perspective, the wealthiest counties in the region are paying the least and receiving the largest per trip subsidy. According to the 2000 Census, per capita incomes in the collar counties exceeded Cook County and the City of Chicago. DuPage, the second largest county in the region, had the second highest per capita income, exceeding Chicago by over $10,000 (see Table 5-1).

***Table 5-1. Region per Capita Income (in 1999 dollars)***

| Location | Per Capita Income |
|---|---|
| City of Chicago | $20,175 |
| Cook | $23,227 |
| DuPage | $31,315 |
| Kane | $24,315 |
| Lake | $32,102 |
| McHenry | $26,476 |
| Will | $24,613 |

Source: U.S. Census Bureau, 2000.

The apparent mismatch between the collar counties' ability to pay and their actual contributions has spawned a recent interest at the CTA to work with the state legislature to increase the collar county contribution. The new revenue generated from the collar counties depends on how much the sales tax is increased. This report considers the revenue potential if the sales tax is increased to ½ percent, ¾ percent, or 1 percent.[27] Two of the scenarios also consider the consequences of maintaining the public transportation funds at their current rate (25 percent state match) or reducing the public transportation funds to a 20 percent state match. The final scenario examines the possibility of increasing the sales tax in DuPage and Lake Counties only. Regardless of how much the collar county tax is increased, the benefit to the CTA depends entirely on whether or not the current formula remains intact or is revised. This report considers six scenarios regarding the funding formula:

- **Scenario 1.** No change in the existing formula for allocating sales tax revenue

This scenario would improve suburban transit by infusing Pace and Metra with significant new resources. While additional discretionary resources would be available to CTA, there is no guarantee that the RTA would direct these resources to the CTA. For the purposes of this analysis, however, the author assumed that the CTA continues to receive 97 percent of the discretionary operating funds.

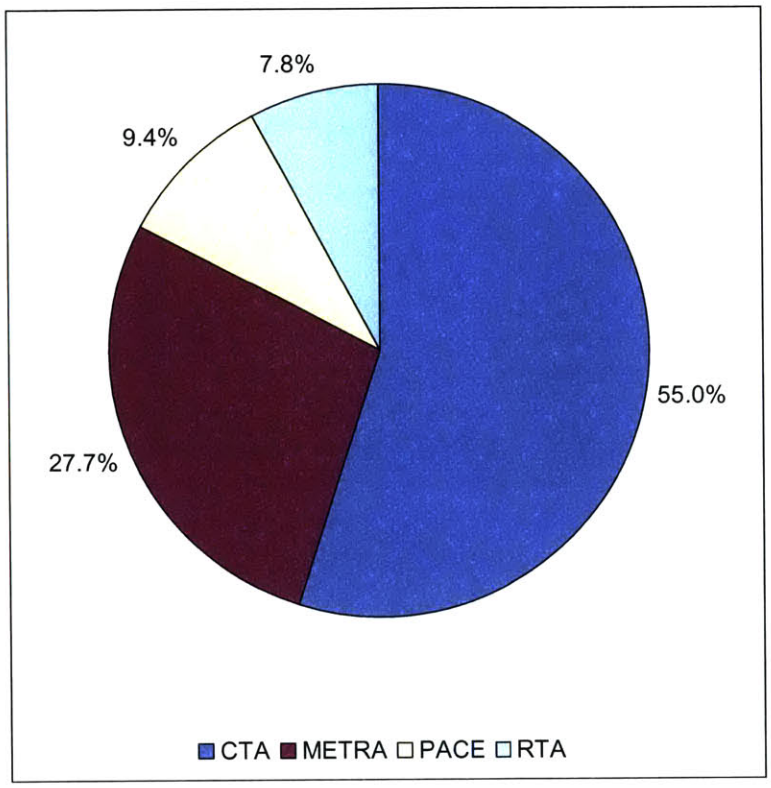
- **Scenario 2.** Legislation that creates a new funding formula freezing the present-day ratios of discretionary and operating dollars

This scenario is based on an analysis of the 2004 combined formula and discretionary resources which determined that the RTA is distributing the total sales tax and public transportation funds using the following ratios: CTA 55 percent, Metra 27.7 percent, Pace 9.4

[27] If the collar county sales tax were increased to 1 percent, it would need to be structured similar to Cook County, where the collar counties actually pay 0.75 percent and the state sales tax makes up the difference (see Section 3.2).

percent, and the RTA 7.8 percent (internal funds only). Formalizing the current allocation schemes would not increase CTA's share of funding, but it would introduce predictability into CTA's financial planning process and decrease the agency's reliance on the RTA. Furthermore, CTA would benefit because the increase in collar county funding would increase the overall pie. Figure 5-3 presents the ratios used to analyze Scenario 2.

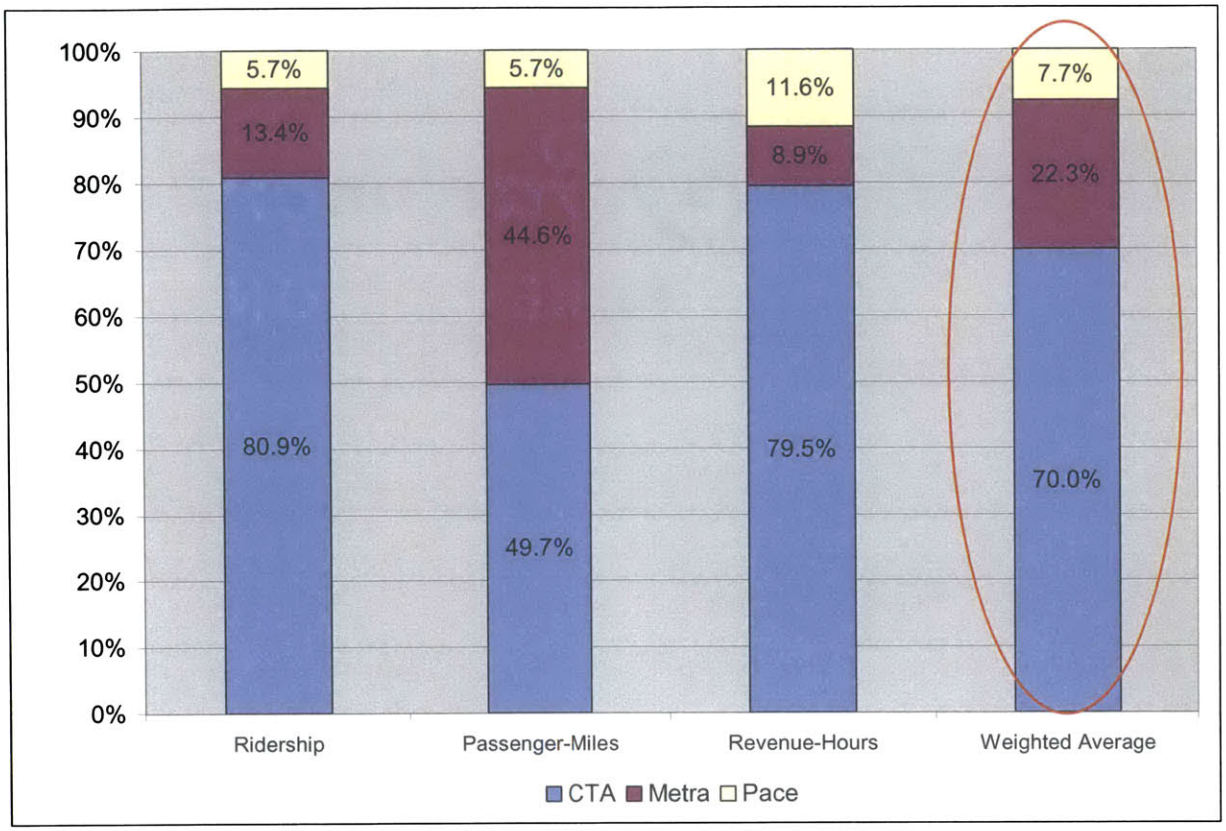
***Figure 5-3. Funding Allocations Based on Current Formula and Discretionary Operating Subsidies***




- **Scenario 3.** New funds allocated based upon a new set of performance measures, while existing money is allocated based on current allocations

Scenario 3 attempts to introduce performance measures, while insuring that no agency is worse off than before the collar county share was increased. The performance measures considered here are presented in Figure 5-4; the measure selected is a weighted average of the three performance measures presented in Section 3.4. This measure is intended to serve as a placeholder, because developing performance measures is beyond the scope of this report. The region should develop a set of performance measures that promote efficiency, while still protecting transit's unique market segments. This scenario considers the benefits to the region with and without RTA discretionary dollars.

***Figure 5-4. Key Performance Measures for the Region***

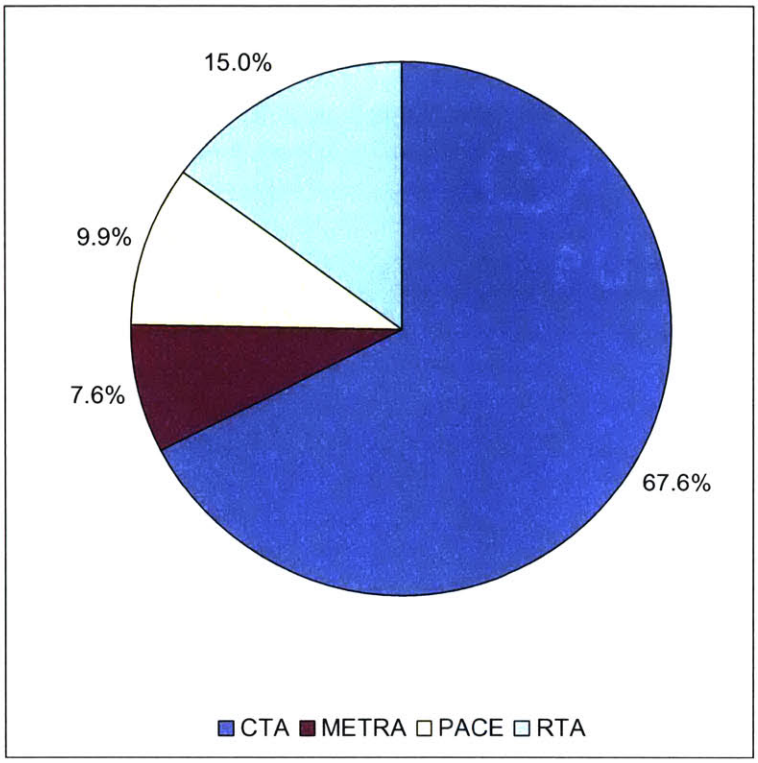



Source: Calculated by Jason Lee, Chicago Transit Authority, 2004.

- **Scenario 4.** New money is allocated based on revenue vehicle hours, while existing money is allocated based on current allocations.

Allocating money based on revenue vehicle hours is an attempt to evaluate a performance measure that is likely to be useful for promoting efficiency within the bus mode. The bus system is targeted here because bus ridership has suffered the most under the current system. In this analysis, Pace receives a significantly higher share of resources and Metra's relative portion drops. In this scenario, the author also allocated 15 percent of the new funds to the RTA. While 15 percent is significantly less than the RTA currently enjoys in discretionary resources, they would be truly discretionary, as opposed to the status quo, which requires almost all of the discretionary funds to go towards keeping the CTA afloat. Figure 5-5 presents the allocation ratios that the author used to calculate the resource potential of Scenario 4.

***Figure 5-5. Funding Allocation Ratios for New Funds Based on Revenue Hours of Service and New RTA Discretionary Resources.***




- **Scenario 5.** All resources are allocated based on performance measures

Scenario 5 is the most radical scenario because it does not attempt to preserve the status quo. In this scenario, the CTA becomes better off at the expense of Pace and Metra. This scenario envisions a world without a geographically based funding formula. Since it is based on who provides the highest level of service and not who pays into the system, it offers the greatest possibility of encouraging healthy competition between the service providers. However, it also presents the largest political challenges. To mitigate these challenges, the author increased the RTA discretionary pot to 20 percent. A portion of this money must go to RTA internal expenditures. However, the remainder of the funds could be used to offset the short-term implications of this allocation strategy.

- **Scenario 6.** Increase the sales tax in DuPage and Lake Counties, but keep the rest of the collar counties at ¼ percent.

Scenario 6 considers the resources that could be generated if the sales tax were increased just in DuPage and Lake Counties. These wealthy counties both border Cook County and enjoy a level of service on par with suburban Cook. This scenario allocates resources using the same strategy as Scenario 3, where the existing funds are distributed based on current funding levels and the new funds are allocated based on performance measures. Some discretionary resources are also included for the RTA.

The Funding Analysis Framework is used in the following sections to better understand the potential benefits and drawbacks to increasing collar county funding. All six scenarios are analyzed to better understand the competing realities that CTA faces.

## Revenue Potential

The following section presents the revenue potential for each of the six scenarios and then uses the funding evaluation framework to consider the impact that each scenario will have on the CTA and the region.

*Funding Evaluation Framework*

- What is the revenue potential for the CTA?
- What is the revenue potential for the region?
- Is the tax effective?
  - Does the revenue potential sufficiently address the short- and long-term funding needs at CTA?
  - Does the funding source increase the predictability and stability of CTA's current funding sources (e.g., does it balance or exaggerate the cyclical pattern of the sales tax)?
- Does it have relatively high or low collection and compliance costs?

- **Scenario 1.** No change in the existing formula for allocating sales tax revenue

Scenario 1, presented in Table 5-2, provides compelling evidence that the region as a whole will benefit from an increased collar county contribution. Metra's funds would increase substantially, and Pace would also benefits. Looking at the total resources generated, even a ¼ percent increase could potentially cover the region's paratransit needs. Despite these regional benefits, CTA's challenges are not addressed by this scenario because there are no guarantees that the RTA will use the money for the CTA or for operating expenses generally. They are just as likely to decide to shift the resources to their discretionary capital program, making CTA no better off than it is under the current system.

***Table 5-2. Additional Revenue Generated Under Scenario 1***

| New Operating Funds | 1% Cook 0.5% Collar | 1% Cook 0.75% Collar | 1% Cook 1% Collar |
|---|---|---|---|
| CTA | $27,067,000 | $54,132,000 | $81,199,000 |
| Metra | $61,284,000 | $122,567,000 | $183,850,000 |
| Pace | $27,186,000 | $54,370,000 | $81,554,000 |
| RTA | $13,212,000 | $26,425,000 | $39,638,000 |
| TOTAL | $128,746,000 | $257,492,000 | $386,239,000 |

- **Scenario 2.** Legislation that creates a new funding formula freezing the present-day ratios of discretionary and operating dollars.

For Scenario 2 the author calculated the additional revenue for two cases:

- State public transportation funds remain at 25 percent of the sales tax revenue; or
- State public transportation funds are reduced to 20 percent of the sales tax revenue.

Under both versions of Scenario 2 the CTA does better than it did under Scenario 1, because CTA's formula funds will stop shrinking relative to Metra and Pace because the City of Chicago has a declining sales tax base (see Table 5-3 and Table 5-4). Because it stabilizes the current funding resources, all constituencies will be "held harmless" on old money and gain on new money. Stabilizing the current allocation of discretionary and formula resources does not undo previous damage, but it does prevent future harm as Table 5-4 indicates reducing the percent of the public transportation funds has only a small impact on the region as a whole, and an even smaller impact on the Chicago Transit Authority. This strategy should not be viewed as a savings for the state, because their total subsidy level actually increases as a result of matching increased collar county funds. Table 5-5 documents the impact that increased collar county funding will have on the state if the PTFs remain or are reduced to 20 percent; in only one instance is the state's burden reduced. While it is not in the RTA's best interest to advocate for a reduced state contribution, it may be an effective political compromise if the state legislature is unwilling to maintain the current contribution rate. RTA is likely to oppose this scenario, because they lose the bulk of their discretionary pot. Even if one could argue that the discretionary money they have now is not truly discretionary, the agency is not likely to share that view.

***Table 5-3. Additional Revenue Generated Under Scenario 2***

| New Operating Funds | 1% Cook 0.5% Collar | 1% Cook 0.75% Collar | 1% Cook 1% Collar |
|---|---|---|---|
| CTA | $70,835,000 | $141,669,000 | $212,504,000 |
| Metra | $35,700,000 | $71,399,000 | $107,098,000 |
| Pace | $12,121,000 | $24,242,000 | $36,363,000 |
| RTA | $10,092,000 | $20,184,000 | $30,276,000 |
| TOTAL | $128,746,000 | $257,492,000 | $386,239,000 |

***Table 5-4. Additional Revenue Generated Under Scenario 2 (PTF = 20%)***

| New Operating Funds | 1% Cook 0.5% Collar | 1% Cook 0.75% Collar | 1% Cook 1% Collar |
|---|---|---|---|
| CTA | $68,001,000 | $136,002,000 | $204,003,000 |
| Metra | $34,271,000 | $68,542,000 | $102,814,000 |
| Pace | $11,636,000 | $23,272,000 | $34,908,000 |
| RTA | $9,688,000 | $19,376,000 | $29,065,000 |
| TOTAL | $123,597,000 | $247,193,000 | $370,790,000 |

***Table 5-5. Anticipated Change in Public Transit Fund Contributions by the State***

| | 1% Cook 0.5% Collar | 1% Cook 0.75% Collar | 1% Cook 1% Collar |
|---|---|---|---|
| 25% match | $25,749,000 | $51,498,000 | $77,248,000 |
| 20% match | -$12,988,000 | $7,611,000 | $28,211,000 |

- **Scenario 3.** New funds allocated based upon a new set of performance measures, while existing money is allocated based on current allocations

Scenario 3 provides significant resources for the Chicago Transit Authority and encourages healthy competition between the service providers. If all of the new money is allocated by performance measures and all of the existing money is allocated based on the current shares, the RTA is left with zero discretionary resources (see Table 5-6). This is likely to create the problems discussed in Scenario 2. A more prudent approach would be to give the RTA 15 percent of the new funds to allocate at their discretion based on a transparent grant process. This still gives the CTA significant resources (ranging between $77 and $230 million) without alienating the RTA (see Table 5-7). If the collar county contribution increased to ½ percent, CTA would receive an additional $90 million.

***Table 5-6. Additional Revenue Generated Under Scenario 3 – Without RTA Discretion***

| New Operating Funds | 1% Cook 0.5% Collar | 1% Cook 0.75% Collar | 1% Cook 1% Collar |
|---|---|---|---|
| CTA | $90,122,200 | $180,244,400 | $270,367,300 |
| Metra | $28,710,358 | $57,420,716 | $86,131,297 |
| Pace | $9,913,442 | $19,826,884 | $29,740,403 |
| RTA | $0 | $0 | $0 |
| TOTAL | $128,746,000 | $257,492,000 | $386,239,000 |

***Table 5-7. Additional Revenue Generated Under Scenario 3 – With RTA Discretion***

| New Operating Funds | 1% Cook 0.5% Collar | 1% Cook 0.75% Collar | 1% Cook 1% Collar |
|---|---|---|---|
| CTA | $76,603,870 | $153,207,740 | $229,812,205 |
| Metra | $24,461,740 | $48,923,480 | $73,385,410 |
| Pace | $8,368,490 | $16,736,980 | $25,105,535 |
| RTA | $19,311,900 | $38,623,800 | $57,935,850 |
| TOTAL | $128,746,000 | $257,492,000 | $386,239,000 |

- **Scenario 4.** New money is allocated based on revenue vehicle hours, while existing money is allocated based on current allocations

Table 5-8 shows that the CTA receives the lion's share of the money under Scenario 4. Pace also benefits from increased resources; although they receive less than they do under Scenario 1 (status quo) and only slightly more than they do under Scenario 2 (stabilizing current allocations). Metra gains the least, which may be appropriate considering they currently report excess formula funds, but it makes this scenario politically difficult. Scenario 4 was developed to support bus services in the region. If money is allocated based on revenue-hours, the CTA will have an incentive to shift resources to bus to increase their revenue-hours and thus their overall funding. Again, reducing the percent of state matching funds does not have a significant impact on the total funding levels (see Table 5-9)

***Table 5-8. Additional Revenue Generated Under Scenario 4***

| New Operating Funds | 1% Cook 0.5% Collar | 1% Cook 0.75% Collar | 1% Cook 1% Collar |
|---|---|---|---|
| CTA | $87,000,110 | $174,000,219 | $261,001,004 |
| Metra | $9,739,635 | $19,479,270 | $29,218,980 |
| Pace | $12,694,356 | $25,388,711 | $38,083,165 |
| RTA | $19,311,900 | $38,623,800 | $57,935,850 |
| TOTAL | $128,746,000 | $257,492,000 | $386,239,000 |

***Table 5-9. Additional Revenue Generated Under Scenario 4 (PTF = 20%)***

| New Operating Funds | 1% Cook 0.5% Collar | 1% Cook 0.75% Collar | 1% Cook 1% Collar |
|---|---|---|---|
| CTA | $83,520,673 | $167,040,670 | $250,561,343 |
| Metra | $9,350,113 | $18,700,150 | $28,050,264 |
| Pace | $12,186,664 | $24,373,230 | $36,559,894 |
| RTA | $18,539,550 | $37,078,950 | $55,618,500 |
| TOTAL | $123,597,000 | $247,193,000 | $370,790,000 |

- **Scenario 5.** All resources are allocated based on performance measures

As one might expect, Scenario 5 generates the greatest additional resources for the Chicago Transit Authority (see Table 5-10). While this seems extreme based on the current funding allocation, a broader view suggests that the urban provider should be receiving the bulk of the region's resources, because a strong urban system maximizes regional benefits such as decreased congestion and pollution. This scenario makes no attempt to maintain current funding levels, as evidenced by Metra and Pace losing resources. The RTA could ameliorate this loss through its discretionary resources. While Scenario 5 may help the CTA and the regional goals of transit, it erodes any opportunity for partnership among the three service providers and is the most politically challenging scenario.

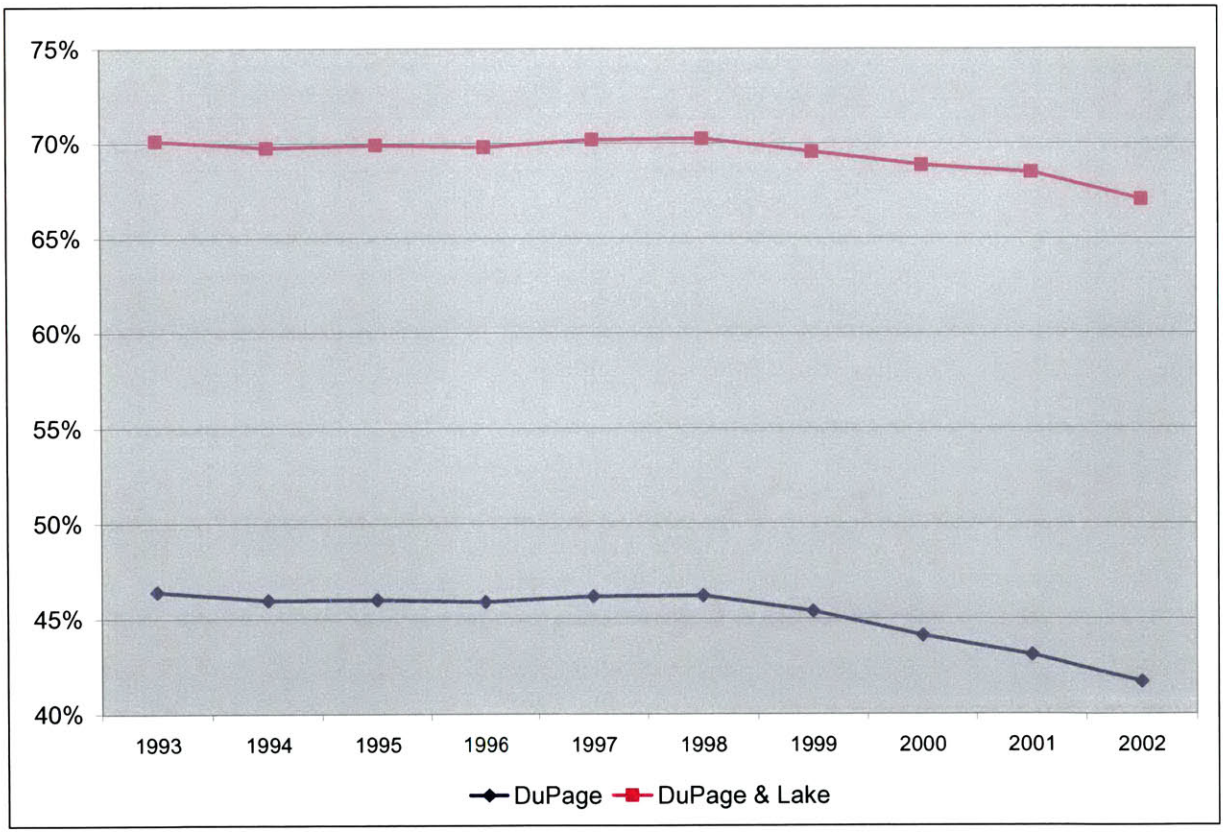
***Table 5-10.Additional Revenue Generated Under Scenario 5***

| New Operating Funds | 1% Cook 0.5% Collar | 1% Cook 0.75% Collar | 1% Cook 1% Collar |
|---|---|---|---|
| CTA | $114,234,000 | $190,838,000 | $267,442,000 |
| Metra | -$43,502,000 | -$18,332,000 | $6,838,000 |
| Pace | -$21,430,000 | -$13,769,000 | -$6,109,000 |
| RTA | $79,446,000 | $98,757,000 | $118,070,000 |
| TOTAL | $128,746,000 | $257,492,000 | $386,239,000 |

- **Scenario 6.** Increase the sales tax in DuPage and Lake Counties, but keep the rest of the collar counties at ¼ percent

When viewed collectively, DuPage and Lake Counties contribute approximately two-thirds of the collar county revenue (see Figure 5-6). However, their relative share has declined slightly in recent years as the outer suburbs surpass them in growth rates. Increasing the sales tax in both counties generates significantly more resources than simply increasing the tax in DuPage. For example, if the tax is increased to ¾ percent in DuPage only, regional funding will increase by $108 million (see Table 5-11). Alternatively, increasing both counties to ¾ percent generates $173 million (see Table 5-12). While this scenario generates less total resources than the first five, it may be more politically feasible than the others because the current inequities are so pronounced. Because DuPage and Lake's combined sales tax base is increasing faster than inflation, the resources generated by Scenario 6 will also increase over time, offsetting the urban sales base trends.

***Figure 5-6. Sales Tax Collected in DuPage and Lake as a Percentage of Total Collar County Contributions***




Source: Regional Transportation Authority, 2003.

***Table 5-11. Additional Revenue Generated Under Scenario 6 (DuPage only)***

| New Operating Funds | 1% Cook 0.5% Collar | 1% Cook 0.75% Collar | 1% Cook 1% Collar |
|---|---|---|---|
| CTA | $32,173,875 | $64,347,156 | $96,521,031 |
| Metra | $10,274,011 | $20,547,831 | $30,821,842 |
| Pace | $3,514,793 | $7,029,521 | $10,544,314 |
| RTA | $8,111,061 | $16,221,972 | $24,333,033 |
| TOTAL | $54,073,740 | $108,146,480 | $162,220,220 |

***Table 5-12. Additional Revenue Generated Under Scenario 6 (DuPage & Lake)***

| New Operating Funds | 1% Cook 0.5% Collar | 1% Cook 0.75% Collar | 1% Cook 1% Collar |
|---|---|---|---|
| CTA | $51,325,000 | $102,650,000 | $153,975,000 |
| Metra | $16,390,000 | $32,779,000 | $49,169,000 |
| Pace | $5,607,000 | $11,214,000 | $16,821,000 |
| RTA | $12,939,000 | $25,878,000 | $38,817,000 |
| TOTAL | $86,260,000 | $172,520,000 | $258,780,000 |

The revenue potential for both the CTA and the region is significant under all but the first scenario, which benefits the region but not CTA. Under a completely performance based system, the CTA could gain between $114 and $267 million. The region as a whole clearly benefits from an increase in collar county contributions. Assuming that the public transportation funds do not change, the region gains between $54 million and $386 million, depending on by how much the tax is increased and who pays. Reducing the public transportation funds to 20 percent still allows the region to retain most of this revenue. Figure 5-7, Figure 5-8, and Figure 5-9 compare the additional revenue generated under the six scenarios.

Since this funding alternative represents an increase to an existing tax rather than a new tax, the author expects the administration and collection costs to be relatively low. This funding alternative will not stabilize the current subsidy system because the collar county sales tax money will also fluctuate based on economic cycles. Scenarios 2 through 6 alleviate the problems associated with a shrinking urban sales tax base. Scenario 1 is the least desirable because it offers no guarantee that the CTA will be better off.

***Figure 5-7. Additional Revenue Generated from a 0.5 Percent Collar County Sales Tax***

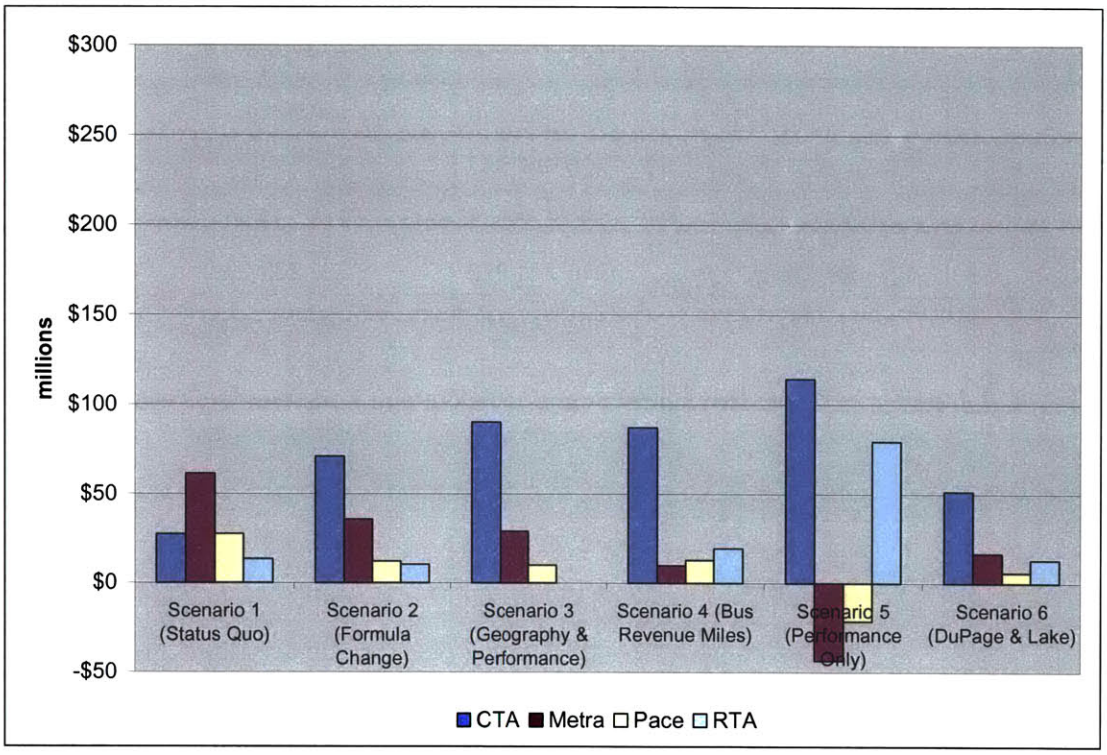



***Figure 5-8. Additional Revenue Generated from a ¾ Percent Collar County Sales Tax***

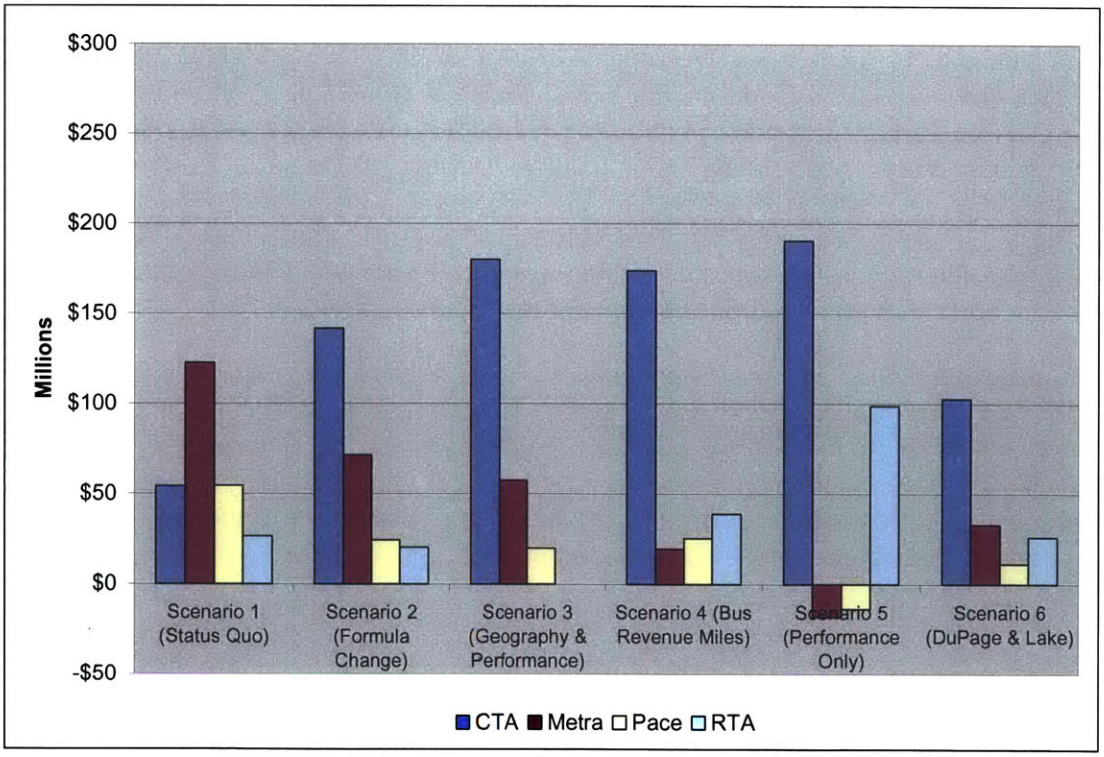
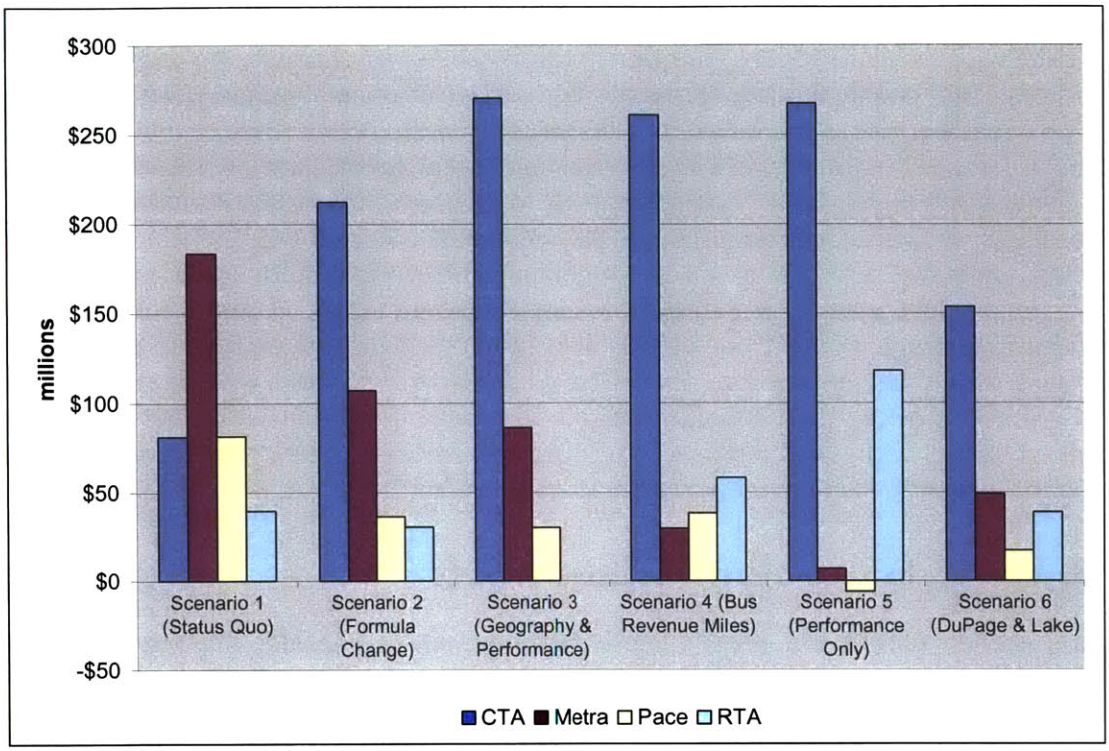


***Figure 5-9. Additional Revenue Generated from a 1 percent Collar County Sales Tax***




## Incidence

The following section uses the funding evaluation framework to consider who bears the incidence of the tax increase.

*Funding Evaluation Framework*

- Who bears the burden (e.g., consumer, producer)? If possible, estimate based on elasticity.
- Is the funding source exportable? What portion of the tax is paid by people who live outside of the jurisdiction (i.e., people who do not vote for the tax)?
- Is the tax equitable?
  - Is it progressive or regressive (vertical equity)?
  - Do people with similar incomes and preferences pay the same (horizontal equity)?
  - Do people who pay the tax benefit from improved transit service (beneficiary principle)?
- Does the CTA's ridership pay more or less?

Collar county residents and suburban businesses will clearly bear the incidence of this funding alternative. It will not be exportable to outsiders because the collar counties do not have a significant tourism industry. To the extent that residents in Cook County shop in the collar counties, a small portion of the tax might be paid by non-collar county residents. Since the sales tax applies to a variety of goods, some elastic and some inelastic, it is difficult to make a general

statement about whether collar county consumers, producers, or suppliers will bear the burden of the tax. On inelastic goods consumers will pay the tax, while producers will bear the burden for more elastic goods.

If the increase in collar county funding allows the CTA to avoid a fare increase, CTA riders will pay less. CTA riders who live in the collar counties will pay for the tax increase, but the majority of CTA riders will not pay more. In general, sales taxes are regressive. Low-income residents in the collar counties will pay a larger portion of their total income towards the sales tax than wealthier residents. However, considering that the wealthiest counties are currently paying a smaller percentage than Cook County, an argument could be made that the tax is progressive because it increases the contribution of those who can best afford to pay. Creating a uniform tax under which the entire region pays 1 percent will also introduce horizontal equity into the region. The tax increase cannot be construed as a user fee. Suburban transit riders who pay the tax will gain from improved service, but there is no direct connection between who pays and who benefits. If the collar county tax is increased to ½ percent, it will reduce cross-subsidies from suburban Cook and contribute to the region's paratransit expenditures.

## Benevolent or Malevolent Side Effects

The following section uses the funding evaluation framework to consider the potential side effects that increasing the collar county contribution will have on the CTA and the larger metropolitan area.

*Funding Evaluation Framework*

- Is the funding mechanism efficient? Does it distort people's spending habits or encourage people/businesses to relocate in order to avoid the tax?
- Does the tax provide incentives for current riders to use automobiles more or less?
- Does the tax provide incentives for businesses and residents to use automobiles more or less?
- Does the tax significantly encourage (or discourage) businesses and residents to locate in transit-oriented areas?
- How will the tax influence CTA (and the Region's) service delivery?
- Will the tax encourage the CTA to advocate politically for policies that support (or hurt) transit?

Increasing the collar county contribution will correct a distortion in the current system by equalizing the sales tax throughout the region. Currently, there is a small incentive for people living on the border of Cook County to shop in the collar counties. Equalizing the sales taxes will remove this advantage. Because the tax is not directly tied to transportation, it will have little direct effect on mode share in the region. However, if it leads to improved suburban service, it could provide an incentive for current riders and potential riders to use their automobile less. The tax does not provide any direct incentives for businesses to locate in transit oriented areas.

It is difficult to predict how the collar county tax will impact CTA and regional service delivery. The scenarios that introduce performance measures will provide incentives for the service providers to improve service in an effort to compete for additional funds. Scenario 4, for example, may encourage CTA to expand bus service to increase revenue hours. This scenario could also encourage Metra to add more stops within the City of Chicago. None of the scenarios appear to provide negative incentives for the CTA to advocate against transit. Hopefully, the scenarios that include RTA discretion will encourage the service providers to work more closely together to advocate for increased resources. This would be a welcome change from the current system, which pits the different agencies against one another.

## Political Feasibility

The following section uses the funding evaluation framework to consider whether increasing the collar county contribution is politically feasible now or in the future.

*Funding Evaluation Framework*

- Are there legal or institutional barriers to implementing the funding alternative?
- Who would administer the tax? Who would levy the tax?
- Is the tax broad-based? Does it have the potential to stimulate broad symbolic anti-tax opposition?
- Is the tax focused on powerful interest groups (e.g., businesses) likely to generate sustained well-financed opposition?
- If the funding source is not currently feasible, could it be politically feasible in the future, given a favorable set of circumstances?

If the RTA decided to increase the collar county contribution, it would need approval from the state legislature; however, because it is an existing tax, the administration would not change. The state would continue to collect and transfer the revenue to the RTA. There is no one sector that is likely to oppose this funding mechanism. Groups that oppose sales taxes will likely oppose this alternative, but it is not likely to invite sustained opposition from powerful interest groups. The biggest challenge this funding alternative faces is suburban opposition and symbolic anti-tax opposition. Most suburban residents do not perceive a need for better regional transit services. The majority of collar county residents drive to work and those that use the commuter rail system tend to be satisfied with the current level of service. Obviously, the fifth scenario, which takes money away from Pace and Metra and gives it to CTA, is not politically feasible. The collar counties would never agree to pay more and receive less. As a result, the RTA should seek out scenarios where every constituency will be "held harmless" on old money and gain on new money. If the money were shifted to regional paratransit service, perceptions might improve. Scenario 4 will also be difficult to implement because the CTA and Pace receive the majority of the new funds, rather than Metra. Scenario 6 is promising because it draws resources from the wealthiest collar counties with the best relative service levels.

One way to maintain suburban support for a sales tax increase is to dedicate a portion of the funding to other transportation modes that support transit, but are more cost effective in low density areas. For example, in a recent memorandum to the President of CTA, transportation expert Fred Salvucci recommended that RTA broaden its mission to "include funding of sidewalk and street improvements to support pedestrian- and bicycle-friendly and transit-oriented development, throughout the region" (Salvucci, 2003b). Houston, Texas has implemented this model with great success by dedicating three quarters of its sales tax revenue to transit projects with the remaining quarter going to the Regional Mobility Program that focuses on roadway and sidewalk improvements, landscape projects and high occupancy vehicle lanes (Houston METRO Website, 2003).

Pace is desperate for additional funds and might support increased collar county contributions. However the RTA and Metra are likely to oppose this funding alternative, because they do not perceive the current system as broken. This opposition presents a tremendous challenge for the CTA. The CTA should look to suburban Cook County for allies in making their case. If the state match is decreased, they may also find supporters among the downstate legislators.

## 5.3 Including Transit Pass with Auto Registration

In the State of Illinois, automobile registration is administered entirely through the Vehicle Services Department of the State of Illinois, which is run under the Secretary of State. Citizens register their vehicles at one of the 130 Secretary of State Driver Facilities, 28 of which are located in the Chicago metropolitan area. In addition, automobile owners can renew their registration through the Internet. The registration fee varies based on vehicle type. The registration fee for a passenger vehicle is $78 per year, while the registration fee for commercial trucks and motorcycles varies by class. Currently there are no additional county or city specific fees in Illinois. Table 5-13 summarizes passenger vehicle registration revenue in the Chicago metropolitan area. Table 5-14 presents the vehicle registration fees in surrounding states; Illinois' vehicle registration fee is already relatively high compared to its neighbors.

***Table 5-13. 2003 Vehicle Registration Revenue by County***

| County | Passenger Vehicles | Registration Revenue |
|---|---|---|
| Cook | 2,775,411 | $216,482,058 |
| DuPage | 645,637 | $50,359,686 |
| Kane | 265,328 | $20,695,584 |
| Lake | 425,626 | $33,198,828 |
| McHenry | 174,639 | $13,621,842 |
| Will | 253,036 | $19,736,808 |
| Total | 3,406,369 | $354,094,806 |

***Table 5-14. Vehicle Registration Fees in Surrounding States***

| State | Fee |
|---|---|
| Illinois | $78 |
| Iowa* | $40 to $300 |
| Wisconsin | $90 |
| Indiana | $35.75 |
| Missouri** | $18.25 to $51.25 |

In Iowa, fees are based on weight and value,
in Missouri fees are based on taxable horsepower.

In addition to registration fees, automobile owners in the State of Illinois must also pay the cost of acquiring a title and the sales tax on the purchase price of the vehicle. To obtain a title, automobile owners pay a one-time $65 fee. The amount of sales tax automobile owners must pay is dependent on where the owner resides. Statewide, the tax rate is 6.25 percent; however, in Chicago and in the collar counties, the tax rate is 7.25 percent. In addition, Cook County administers its own 0.75 percent sales tax on vehicle purchases for Cook County residents who buy an automobile either in Cook County or in the collar counties. The county uses the roughly $30 million dollars the tax generates to help fund the county's criminal justice system. Sales taxes on vehicle purchases are generally higher in Illinois, and especially the Chicago area, than in nearby states, where the sales tax rate on vehicle purchases is typically 5 percent.[28]

Attaching a transit fee to the automobile registration is appealing both because the revenue will increase transit subsidies and some automobile trips will be shifted to transit. This section analyzes the potential of a transit fee program for the six county Chicagoland. The fee structure considered in this report consists of a $10 to $80 surcharge for all passenger vehicles. In exchange for paying the fee, the recipients would receive a transit pass worth the equivalent of the fee to be used on either CTA, Pace, or Metra. For the program to work, RTA would have to complete its mission to introduce fare integration into the region. Currently, CTA and Pace are integrated, but Metra is not.

Initially, the author wanted to use the smartcards as the fare media for this funding alternative. The smartcard uses embedded technology to offer transit riders a variety of benefits, including automatic reloading, theft protection, and a 10 percent discount. The smartcard also allows users to manage their accounts on-line. Distributing smartcards on such a large scale would help initiate widespread use of this flexible fare media, which among other benefits, reduces agency costs and passenger dwell time. Unfortunately, the cost of the cards themselves and the associated administrative costs were too high (estimated here as $5 and $2 per person respectively). Furthermore, requiring the smart cards could complicate the registration process because people might not retain their cards from year-to-year. Giving people the option to pay a

[28] This introductory text was prepared by undergraduate researcher Tejus Kothari.

surcharge for a smartcard would be a good compromise because it would promote the media without incurring the mandatory costs.

In the future, if smartcards becomes more cost effective, they offer the potential to build coordination into the regional transit system and to better bridge the automobile and transit modes. For example, the Toll Authority could be approached as a partner in this program and the same smartcard could work for both transit and regional tolls. A similar partnership could be pursued with the Chicago Department of Transportation for public parking in the City of Chicago.

The users of the transit pass will fall into three categories:

- **Existing riders.** People who currently use transit and have an automobile will use the transit cash to offset transit expenditures they would have made anyway. The RTA will not gain additional revenue from people whose annual transit expenditures exceed the transit fee. However, they will gain some revenue for transit riders whose annual transit expenditures are less than the fee.
- **New riders.** People who are not transit riders, but try transit as a result of having the transit smartcard. Initially, I anticipate that most new users will use the transit pass for special events, but if the program is successful a percentage of the new riders will become regular transit users.
- **Non-riders.** While everyone has the option to use the transit pass, there are certainly a percentage of automobile owners who will never ride transit. This money will benefit RTA operations because they receive revenue without having to provide additional services.

A more aggressive version of this program would require that people purchase a discounted annual pass as part of their automobile registration. This concept is similar to the University Pass concept, where all university students pay for an annual transit pass as part of their tuition. The pass is significantly discounted by the transit agency based on the anticipated ridership. While everyone has the option of using transit at no additional fee, those who do not ride the system subsidize those who do. This version of the program requires significant future research and is not considered in this report because of the large number of unknown elements, including:

- What price could the transit agency offer for an annual pass to 1.6 to 4.5 million riders?
- What impact would this pass have on other pass programs?
- How much additional service (and at what cost) would the CTA need to provide to accommodate such a large amount of new riders?
- What will it mean for transit to have the marginal cost of additional trips equal zero?
- How would the CTA monitor pass fraud and abuse?
- How would the public react to such a significant increase in automobile registration fees?

- What are the equity consequences of providing highly subsidized transit passes to automobile owners, while requiring non-automobile owners to pay under the current fare structure?

The Funding Analysis Framework is used in the following sections to better understand the potential benefits and drawbacks to imposing a mandatory transit fee as part of the automobile registration.

## Revenue Potential

The following section uses the Funding Evaluation Framework to evaluate the revenue potential associated with adding a transit fee to the personal vehicle registration fee.

*Funding Evaluation Framework*

- What is the revenue potential for the CTA?
- What is the revenue potential for the region?
- Is the tax effective?
  - Does the revenue potential sufficiently address the short- and long-term funding needs at CTA?
  - Does the funding source increase the predictability and stability of CTA's current funding sources (e.g., does it balance or exaggerate the cyclical pattern of the sales tax)?
- Does it have relatively high or low collection and compliance costs?

The revenue presented in Table 5-15 represents the amount of money that the fee would generate, but it does not predict the net-revenue each agency will accrue. Table 5-16 considers how much money each agency would receive based on the current funding formula. This is because transit agencies do not gain additional revenue from automobile owners whose annual transit spending exceeds the transit fee. Data was not available to determine how many automobile users also spend money on transit. As a proxy, this study considered how many vehicle owners take transit to work. According to the 2000 census, in the Chicago region 12.4 percent of residents take public transit to work. Of those 12.4 percent, three-quarter's indicated that they had access to a vehicle (Census Transportation Planning Package, 2000). Based on these calculations, the region should expect that at least 9.4 percent of the revenue generated from the transit fee will be spent by existing riders, and cannot be considered new operating funds. This calculation only captures the work trip, however within the city limits, it is likely that even if a person drives to work (e.g., reverse commuters) they probably still use transit for some non-work trips such as recreation because parking is expensive and difficult to find. In the suburbs, the work trip is probably a good proxy for transit ridership because parking is relatively easy and once a person invests in a car they are likely to use it for other trips as well.

***Table 5-15. Revenue Generated from Transit Fee***

| | $10 | $20 | $30 | $40 | $50 | $60 | $70 | $80 |
|---|---|---|---|---|---|---|---|---|
| City of Chicago | $3,399,924 | $14,733,004 | $26,066,084 | $37,399,164 | $48,732,244 | $60,065,324 | $71,398,404 | $82,731,484 |
| Suburban Cook | $4,926,309 | $21,347,339 | $37,768,369 | $54,189,399 | $70,610,429 | $87,031,459 | $103,452,489 | $119,873,519 |
| Cook | $8,326,233 | $36,080,343 | $63,834,453 | $91,588,563 | $119,342,673 | $147,096,783 | $174,850,893 | $202,605,003 |
| DuPage | $1,936,911 | $8,393,281 | $14,849,651 | $21,306,021 | $27,762,391 | $34,218,761 | $40,675,131 | $47,131,501 |
| Kane | $795,984 | $3,449,264 | $6,102,544 | $8,755,824 | $11,409,104 | $14,062,384 | $16,715,664 | $19,368,944 |
| Lake | $1,276,878 | $5,533,138 | $9,789,398 | $14,045,658 | $18,301,918 | $22,558,178 | $26,814,438 | $31,070,698 |
| McHenry | $523,917 | $2,270,307 | $4,016,697 | $5,763,087 | $7,509,477 | $9,255,867 | $11,002,257 | $12,748,647 |
| Will | $759,108 | $3,289,468 | $5,819,828 | $8,350,188 | $10,880,548 | $13,410,908 | $15,941,268 | $18,471,628 |
| Total | $13,619,031 | $59,015,801 | $104,412,571 | $149,809,341 | $195,206,111 | $240,602,881 | $285,999,651 | $331,396,421 |

***Table 5-16. Allocating New Revenue to Service Providers***

| Agency | $10 | $20 | $30 | $40 | $50 | $60 | $70 | $80 |
|---|---|---|---|---|---|---|---|---|
| CTA | $4,877,817 | $21,137,206 | $37,396,595 | $53,655,984 | $69,915,373 | $86,174,762 | $102,434,151 | $118,693,540 |
| Metra | $6,414,429 | $27,795,857 | $49,177,286 | $70,558,714 | $91,940,143 | $113,321,571 | $134,703,000 | $156,084,428 |
| Pace | $2,326,786 | $10,082,738 | $17,838,691 | $25,594,643 | $33,350,596 | $41,106,548 | $48,862,501 | $56,618,453 |
| Total | $13,619,031 | $59,015,801 | $104,412,571 | $149,809,341 | $195,206,111 | $240,602,881 | $285,999,651 | $331,396,421 |

The net revenue potential will also be diminished by the cost of accommodating the new riders. As Chapter 4 pointed out, transit fares only pay a portion of the total cost of providing transit services. New transit riders that use the system during off peak hours, will not impose a significant expense because the marginal cost of adding an additional user in the off-peak is close to zero. New riders who become commuters will impose a cost to the system, but that cost will be offset by additional investments they make in the system. Riders who choose to try the system during events or snow days will impose a high marginal cost on the system. However, it is still good public policy to have them riding the system during these events because the marginal cost of driving during events or storms is much higher than the cost of accommodating additional riders on transit system. People who own cars and choose not to use the transit pass represent pure revenue for the transit systems.

Even if the transit agency received the full amount of money generated the revenue potential for a transit fee is not nearly as impressive as the revenue potential of the collar county tax unless the fee is very large. For example, if the current vehicle registration fee were doubled, the revenue generated for the region would be $331 million, with $119 million going to the CTA. To simplify the analysis, the author assumed that the vehicle registration money was allocated using the same formula as the sales tax. While this would limit opposition, it would further support a broken system. Alternatively, the money could be allocated according to performance measures or it could be used as new discretionary money for the RTA. If the money goes to the RTA, the agency should be required to develop a flexible, but transparent grant process that correlates with regional transit goals. Alternatively, the total amount of money could go to the RTA to cover the region's paratransit services. This would help both CTA and Pace, and would also earn the support of the disability community.

While a 100 percent fee increase has significant revenue potential, it is unlikely that such an increase would be politically feasible. A more plausible scenario is a $30 fee, which represents a 38 percent increase in the existing registration fee (see Table 5-17). This would generate $104 million for the region and $37 million for the CTA. Another alternative would be to start with a $30 fee and establish a mechanism to increase the fee over time. Having expanding funding sources tied to performance measures will help the RTA reverse the region's negative transit trends.

One benefit of the transit fee is that it does not necessarily require buy-in from (all) the collar counties. The program could also be implemented in Cook only or Cook, Lake, and DuPage. The City could also implement the tax as a launching pad for a larger program; however, because transit ridership is so high in the City of Chicago, this technique is not likely to generate a lot of revenue.

***Table 5-17. Relative Increase in the Vehicle Registration Fee***

| Current Charge | Proposed Fee | New Total | Percent Increase |
|---|---|---|---|
| $78.00 | $10.00 | $88.00 | 13% |
| $78.00 | $20.00 | $98.00 | 26% |
| $78.00 | $30.00 | $108.00 | 38% |
| $78.00 | $40.00 | $118.00 | 51% |
| $78.00 | $50.00 | $128.00 | 64% |
| $78.00 | $60.00 | $138.00 | 77% |
| $78.00 | $70.00 | $148.00 | 90% |
| $78.00 | $80.00 | $158.00 | 103% |

Implementing a transit fee is not likely to have a high administration cost, since a system is already in place to collect the vehicle registration fee. Some resources would need to be set aside for distributing the money to the RTA. A transit fee has the potential to offset fluctuations in the business cycle. While people may put off purchasing new vehicles during a recession, they are not likely to give up their current vehicle. Despite the cyclical benefits unless the current fee is doubled, this funding alternative is not an effective way of alleviating CTA's funding needs. A $30 fee may stave off a fare hike in the next year, but it does not generate enough resources to replace the loss RTA has endured from the shifting demographics and the loss of federal funds. However, the region should still consider pursuing it as a complementary strategy to more robust subsidy generators because it has the potential to generate new riders.

## Incidence

The following section uses the funding evaluation framework to consider who bears the incidence of the vehicle registration fee increase.

*Funding Evaluation Framework*

- Who bears the burden (e.g., consumer, producer)? If possible, estimate based on elasticity.
- Is the funding source exportable? What portion of the tax is paid by people who live outside of the jurisdiction (i.e., people who do not vote for the tax)?
- Is the tax equitable?
  - Is it progressive or regressive (vertical equity)?
  - Do people with similar incomes and preferences pay the same (horizontal equity)?
  - Do people who pay the tax benefit from improved transit service (beneficiary principle)?
- Does the CTA's ridership pay more or less?

Automobile owners who do not start using transit bear the greatest burden of this tax. This funding source is not exportable, because only people who live in the region pay the vehicle registration. Because it is a flat tax, this funding alternative is regressive, meaning low-income auto-owners will spend a larger portion of their income on the tax than wealthier auto-owners. However, low-income people who do not own cars pay nothing. Similar to the traditional gas tax, this funding source attempts to correct for automobile externalities by making it more expensive to drive relative to transit. Since the fee is relatively small compared to the cost of owning a car, it is unlikely to have a significant impact on behavior. If implemented across the region, the transit fee will be horizontally equitable, because people with the same incomes and preferences for automobile ownership will pay the same fee. For people who use the transit pass, the surcharge can be considered a fee because it provides a direct benefit. It cannot be considered a fee for people who pay the surcharge, but do not use transit. This funding source will allow current riders to pay less if enough money is generated to avoid a fare increase.

## Benevolent or Malevolent Side Effects

The following section uses the funding evaluation framework to consider the potential side effects that adding a transit fee to the personal vehicle registration will have on the CTA and the larger metropolitan area.

*Funding Evaluation Framework*

- Is the funding mechanism efficient? Does it distort people's spending habits or encourage people/businesses to relocate in order to avoid the tax?
- Does the tax provide incentives for current riders to use automobiles more or less?
- Does the tax provide incentives for businesses and residents to use automobiles more or less?
- Does the tax significantly encourage (or discourage) businesses and residents to locate in transit-oriented areas?
- How will the tax influence CTA (and the Region's) service delivery?
- Will the tax encourage the CTA to advocate politically for policies that support (or hurt) transit?

The transit fee represents an efficient funding source. It attempts to correct for automobile externalities by shifting resources from personal vehicles to transit. Since it is represents only a small fraction of the cost of owning an automobile, it is unlikely to distort the market or cause people to leave the region. The transit fee will probably not have an impact on current transit riders, unless the funds are used to improve service. Furthermore, while it will encourage current drivers to try transit, it is not likely to have a significant impact on motor vehicle miles. From an economist's perspective, the fee does not change the marginal cost of automobile use, which is the greatest predictor of motor vehicle miles traveled, but it does reduce the marginal cost of transit since a certain number of trips are already paid for.

It is unlikely that the transit fee will influence location decisions by businesses and or residents. Nor is it likely to provide an incentive for CTA to advocate for anti-transit policies. If the CTA wanted to obtain additional revenue from this funding stream, it would be more productive to lobby to increase the fee than to lobby for increased automobile ownership. The fee could have an impact on the region's service delivery. If suburban drivers are required to pay the transit fee, they may demand better suburban services. Furthermore, this alternative would require the RTA to integrate the fare structures, so drivers could access all three systems with one pass. Finally, the CTA would likely have to increase services during events because many of the new riders would choose to try the system on special occasions, such as the July 3rd fireworks.

## Political Feasibility

The following section uses the funding evaluation framework to consider whether adding a transit fee to the personal vehicle registration is politically feasible now or in the future.

*Funding Evaluation Framework*

- Are there legal or institutional barriers to implementing the funding alternative?
- Who would administer the tax? Who would levy the tax?
- Is the tax broad-based? Does it have the potential to stimulate broad symbolic anti-tax opposition?
- Is the tax focused on powerful interest groups (e.g., businesses) likely to generate sustained well-financed opposition?
- If the funding source is not currently feasible, could it be politically feasible in the future, given a favorable set of circumstances?

At the time of this report, the author was not able to determine if there are any legal barriers to adding a regional surcharge. However, legal barriers are quite possible considering that all of the counties currently charge the same rate. This funding alternative should be administered by the Vehicle Services Department for the State of Illinois because they already administer the current registration fee.

This funding alternative is not likely to generate opposition from the business community, because vehicles used for hauling goods would be exempt from the fee. However, automobile manufacturers may present opposition. When California tripled its automobile registration, the headlines read "vehicle sales plunge 35 percent." A transit surcharge does have the potential to generate broad-based anti-tax opposition because people consider driving to be a basic right. Furthermore, many suburban drivers will not use transit and will therefore perceive this funding alternative as a tax. California recently instituted a highly publicized vehicle registration increase, which became a major platform for Governor Schwarzenegger's campaign against former Governor Gray Davis. In California they tripled the registration fee. Had they raised it by a smaller increment, the public may have been more accepting.

Despite the negative press in California, the author believes that this type of fee is politically feasible because of its creativity and its ability to generate new riders. Furthermore, the CTA will

benefit whether or not the collar counties agree to the program. It is unlikely that the Mayor of Chicago will agree to a Chicago-only fee at this time because he has indicated that he is against any new taxes. However, if faced with a fare hike as an alternative, he may support it in the future.

## 5.4 Parking Tax on Off-Street Commercial Spaces

The author initially set out to investigate the possibility of an off-street commercial parking tax in the same level of detail as the collar county tax and the transit fee. Unfortunately, time and resources prevented her from conducting a complete analysis. The following section summarizes the work to date with the hope that future researchers will take up this topic and more fully explore its potential for the CTA and other transit agencies.

An ad valorum tax charges the parking lot owner a percentage of their revenue generated from fees paid for parking services. A flat parking tax collects revenue based on the number of parking stalls regardless of whether or not the owner charges parking fees. Ad valorum taxes are more common and easier for the public to accept because the lot owner's benefit is easily detected. A flat parking tax is simpler to administer because every stall owner pays the same amount. Furthermore it captures more subtle forms of parking revenue. For example, many buildings avoid paying the ad valorum parking fee by including the charge for parking into the cost per square foot of office space.

Currently, two distinct ad valorum parking taxes exist in downtown Chicago – one administered by Cook County and one administered by the City of Chicago. The rates for the county are shown in Table 5-18, for the City in Table 5-19, and the combined impact of both taxes is shown in Table 5-20. Neither tax applies to residential off-street parking of house, apartment or condominium occupants if an arrangement for parking is provided in the house or apartment lease in a written agreement between the landlord and tenant. In addition, the Cook County tax does not apply to hospital or medical employees. The county tax has been in place since January 1, 2001 and is administered by the Cook County Department of Revenue. It generated approximately $31 million in revenue in 2002. The City of Chicago's parking tax generates approximately $67.5 million in revenue in 2002. Current rates have been in place since March 1, 2000.[29]

[29] The author is grateful to undergraduate research Tejas Kothari for developing this text.

Table 5-18. Cook County Parking Tax Structure

| Time Period | Parking Charge Imposed by Operator | Tax Amount | Tax Percent Range |
|---|---|---|---|
| 24 Hours or Less | $3.00 or less | $0.00 | 0% |
| 24 Hours or Less | $3.01 to $4.99 | $0.50 | 10% to 16.7% |
| 24 Hours or Less | $5.00 to $11.99 | $0.75 | 6.25% to 15% |
| 24 Hours or Less | $12.00 or more | $1.00 | up to 8.3% |
| Weekly | $15.00 or less | $0.00 | 0% |
| Weekly | $15.01 to $24.99 | $2.50 | 10% to 16.7% |
| Weekly | $25.00 to $59.99 | $3.75 | 6.25% to 15% |
| Weekly | $60.00 or more | $5.00 | up to 8.3% |
| Monthly | $60 or less | $0.00 | 0% |
| Monthly | $60.01 to $99.99 | $10.00 | 10% to 16.7% |
| Monthly | $100.00 to $239.99 | $15.00 | 6.25% to 15% |
| Monthly | $240.00 or more | $20.00 | up to 8.3% |

Source: Cook County, 2000.

***Table 5-19. City of Chicago Parking Tax Structure***

| Time Period | Parking Charge Imposed by Operator | Tax Amount | Tax Percent Range |
|---|---|---|---|
| 24 Hours or Less | Under $2.00 | $0.00 | 0% |
| 24 Hours or Less | $2.00 to $4.99 | $0.75 | 15% to 37.5% |
| 24 Hours or Less | $5.00 to $11.99 | $1.50 | 12.5% to 30% |
| 24 Hours or Less | $12.00 or more | $2.00 | up to 16.7% |
| Weekly | Under $10.00 | $0.00 | 0% |
| Weekly | $10.01 to $24.99 | $3.75 | 15% to 37.5% |
| Weekly | $25.00 to $59.99 | $7.50 | 12.5% to 30% |
| Weekly | $60.00 or more | $10.00 | up to 16.7% |
| Monthly | Under $40.00 | $0.00 | 0% |
| Monthly | $40.01 to $99.99 | $15.00 | 15% to 37.5% |
| Monthly | $100.00 to $239.99 | $30.00 | 12.5% to 30% |
| Monthly | $240.00 or more | $40.00 | up to 16.7% |

Source: City of Chicago Web Site, 2004.

***Table 5-20. Combined City and County Parking Structure***

| Time Period | Parking Charge Imposed by Operator | Tax Amount | Tax Percent Range |
|---|---|---|---|
| 24 Hours or Less | Under $2.00 | $0.00 | 0% |
| 24 Hours or Less | $2.00 to $3.00 | $0.75 | 25.0% to 37.5% |
| 24 Hours or Less | $3.01 to $4.99 | $1.25 | 25.0% to 41.7% |
| 24 Hours or Less | $5.00 to $11.99 | $2.25 | 18.8% to 45.0% |
| 24 Hours or Less | $12.00 or more | $3.00 | up to 25.0% |
| Weekly | Under $10.00 | $0.00 | 0% |
| Weekly | $10.00 to $15.00 | $3.75 | 25.0% to 37.5% |
| Weekly | $15.01 to $24.99 | $6.25 | 25.0% to 41.7% |
| Weekly | $25.00 to $59.99 | $11.25 | 18.8% to 45.0% |
| Weekly | $60.00 or more | $15.00 | up to 25.0% |
| Monthly | Under $40.00 | $0.00 | 0% |
| Monthly | $40.00 to $60.00 | $15.00 | 25.0% to 37.5% |
| Monthly | $60.01 to $99.99 | $25.00 | 25.0% to 41.7% |
| Monthly | $100.00 to $239.99 | $45.00 | 18.8% to 45.0% |
| Monthly | $240.00 or more | $60.00 | up to 25.0% |

Source: Cook County, 2000 & City of Chicago Web Site, 2004.

Any new tax proposals must consider the current tax structure. If the new tax replaces the old tax, it must generate enough revenue to compensate for this policy change. If the new tax is levied in addition to the existing tax, the overall burden on consumers and suppliers must be evaluated. This research considers six scenarios for an off-street commercial parking tax:

- **Scenario 1.** Increase the current ad valorum parking tax in the CBD and earmark the revenue for transit.
- **Scenario 2.** Maintain the current ad valorum parking tax in the CBD and add an additional flat tax on off-street commercial spaces in the CBD.
- **Scenario 3.** Eliminate the current ad valorum parking tax in the CBD and replace it with a flat tax on off-street commercial parking spaces in the CBD.
- **Scenario 4.** Repeat Scenario 3, but extend the flat tax to the whole city. Consider a tiered approach based on demand (CBD, outer CBD, everywhere else).
- **Scenario 5.** Repeat Scenario 2, but extend the flat tax to the whole city (maintain tiered approach).
- **Scenario 6.** Repeat Scenario 2, but extend the tiered flat tax to Cook County and the collar counties.

Regardless of the scenario, the author suggests exempting lots with less than 10 spaces to minimize the impact on small business owners and ease enforcement. The Funding Analysis Framework is used in the following sections to better understand the potential benefits and drawbacks to increasing collar county funding. All six scenarios are analyzed to better understand the competing realities that CTA faces.

## Revenue Potential

The following section uses the Funding Evaluation Framework to evaluate the revenue potential of an off-street commercial parking tax.

*Funding Evaluation Framework*

- What is the revenue potential for the CTA?
- What is the revenue potential for the region?
- Is the tax effective?
  - Does the revenue potential sufficiently address the short- and long-term funding needs at CTA?
  - Does the funding source increase the predictability and stability of CTA's current funding sources (e.g., does it balance or exaggerate the cyclical pattern of the sales tax)?
- Does it have relatively high or low collection and compliance costs?

Currently, all of the off-street commercial spaces in the central business district have more than 10 spaces and most charge for parking. Some are structured as garages, while others are structured as open air lots. The largest facilities offer over 1000 spaces, while the smaller facilities typically provide between 50 and 100 spaces. In a 1998 report, the City's planning office determined that downtown Chicago offers approximately 96,189 spaces (City of Chicago Department of Planning and Development, 1998).

Scenario 1 (increase the current ad valorum tax) is difficult to evaluate without detailed revenue information for each existing parking lot. However Scenarios 2 and 3 are easier to consider. Table 5-21 presents the revenue that a flat tax on commercial spaces could generate in the CBD. The first column considers Scenario 2 (replacing the existing ad valorum tax with a flat tax) by assuming that the existing taxes (approximately $98.5 million annually) remain in place. The second column evaluates Scenario 3 by assuming that the new tax replaces the old tax. As the table demonstrates, a fairly substantial flat tax (over $1000) is needed to replace the revenue from the current ad valorum tax.

The revenue potential of the parking flat tax would be greatly expanded if applied to the City at large (Scenarios 4 and 5) or to the region as a whole (Scenario 6). These scenarios capture parking lots associated with grocery stores, shopping malls, and movie theaters. There are also several lots off of Lake Shore Boulevard. Data limitations prevented the author from conducting this analysis.

***Table 5-21. Revenue Potential for a Parking Tax in the CBD***

| Annual Fee | Revenue (if existing tax remains) | Revenue (if existing tax is eliminated) |
|---|---|---|
| $250 | $24,047,250 | ($74,452,750) |
| $300 | $28,856,700 | ($69,643,300) |
| $400 | $38,475,600 | ($60,024,400) |
| $500 | $48,094,500 | ($50,405,500) |
| $600 | $57,713,400 | ($40,786,600) |
| $700 | $67,332,300 | ($31,167,700) |
| $800 | $76,951,200 | ($21,548,800) |
| $800 | $76,951,200 | ($21,548,800) |
| $1,000 | $96,189,000 | ($2,311,000) |
| $1,500 | $144,283,500 | $45,783,500 |
| $2,000 | $192,378,000 | $93,878,000 |
| $2,500 | $240,472,500 | $141,972,500 |

If implemented citywide, this funding alternative is not designed to generate regional resources; instead the resources should be directed solely to the CTA. However, the region may benefit indirectly from this funding mechanism. For example, because the municipal match counts towards the cost recovery ratio, the CTA may be able to shoulder a greater percentage of the region's commitment. This would be especially beneficial for Pace, which has a higher cost recovery ratio than most suburban providers. Alternatively, the region could implement the program and the money would go to the RTA.

The author has real concerns that a flat tax on commercial parking spaces could effectively address the funding needs in Chicago. If a flat tax is used, it most be indexed to inflation to maintain its effectiveness over time. Pay lots are already being charged a high percentage of their total revenue (18 to 45 percent). An annual fee of $2000, which does have real revenue potential, translates to an $8 per space tax per day (assuming 250 annual work days). A $2500 fee translates to a $10 per space tax per day. More data is needed to evaluate the effectiveness of the untested scenarios.

In general, a flat tax would be relatively cheap to administer, because owners pay the same amount per space, regardless of how they operate their lot. It could be included as part of the property tax payments. However, this tax could only be implemented if the city (or region) had a mechanism for tracking the number of off-street commercial spaces and enforcement measures were put in place to prevent people from claiming that commercial spaces were exempt residential spaces.

## Incidence

The following section uses the funding evaluation framework to consider who bears the incidence of an off-street commercial vehicle tax.

*Funding Evaluation Framework*

- Who bears the burden (e.g., consumer, producer)? If possible, estimate based on elasticity.
- Is the funding source exportable? What portion of the tax is paid by people who live outside of the jurisdiction (i.e., people who do not vote for the tax)?
- Is the tax equitable?
  - Is it progressive or regressive (vertical equity)?
  - Do people with similar incomes and preferences pay the same (horizontal equity)?
  - Do people who pay the tax benefit from improved transit service (beneficiary principle)?
- Does the CTA's ridership pay more or less?

Perhaps the most complicated aspect of the parking tax is who bears the burden. This analysis requires an accurate understanding of the elasticity of demand for parking. It also depends on whether or not the current pay lots are charging the maximum amount that the market will bear and whether or not currently free parking lot owners will decide to pass the fee along to users. In general, suburban drivers who do not have access to the commuter rail system are probably the least elastic. Urban residents who currently receive free parking are the most elastic. If the charge is small and restricted to the central business district, the parking tax will simply go towards capturing the windfall profits generated by a constrained parking system in downtown Chicago. If the fee is significantly large, it will be passed on to consumers and will lead to behavioral changes. More research is needed to determine at what price the incidence will shift.

The exportability of the tax depends on who bears the incidence. If the tax is passed along to consumers, suburban residents who drive to the City to park will generate revenue for the City. If the parking tax is applied to the CTA as a municipal match, suburban residents will be cross-subsidizing urban transit users. If the parking suppliers absorb the tax, it cannot be considered exportable.

If passed on to consumers, the proposed parking tax would be regressive, meaning low-income people pay a higher portion of their income than wealthier people. However, given that wealthier people are more likely to pay for CBD parking, the regressivity may be minimized. Furthermore, there is no evidence that a small tax will be passed on to the consumer. If the consumer pays the tax, horizontal equity concerns will also arise. For example, two workers with similar salaries and preferences for driving might pay vastly different amounts depending on whether or not they work in the CBD or outside of the City.

If implemented on a large scale, the flat parking fee could have a significant impact on downtown congestion because it would contract the parking supply over time. However, it is not a pure example of the beneficiary principle because people who do not pay to park also benefit

from the decreased congestion. A parking tax aimed at motor vehicles ensures that CTA riders pay less, especially if the additional funds are used to avoid future fare increases.

## Benevolent or Malevolent Side Effects

The following section uses the funding evaluation framework to consider the potential side effects that implementing an off-street commercial parking tax will have on the CTA and the larger metropolitan area.

*Funding Evaluation Framework*

- Is the funding mechanism efficient? Does it distort people's spending habits or encourage people/businesses to relocate in order to avoid the tax?
- Does the tax provide incentives for current riders to use automobiles more or less?
- Does the tax provide incentives for businesses and residents to use automobiles more or less?
- Does the tax significantly encourage (or discourage) businesses and residents to locate in transit-oriented areas?
- How will the tax influence CTA (and the Region's) service delivery?
- Will the tax encourage the CTA to advocate politically for policies that support (or hurt) transit?

If the fee is sufficiently large, this funding alternative may shift behavior and provide incentives for developers to reduce their parking supply. Over time, this will serve to control congestion in the downtown area. The biggest negative side effect of an off-street commercial parking space is that it may be accused of pushing businesses to relocate out of the CBD and into suburban office parks. This is almost certainly not the case for modest levels of tax increases. Boston has constrained parking for 30 years, yet there is no evidence that businesses have moved out of the central business district, indeed the CBD has flourished under the parking freeze. While there is no evidence that charging for parking will impact businesses, developers may still use this possibility as a lobbying tactic. For this reason it is essential that tax increases be modest and that this issue be carefully studied and documented. The CTA and the City of Chicago should carefully evaluate this possibility before considering a parking tax because losing businesses would have a greater impact on transit demand than could be offset by the increased subsidies.

If the tax were passed on to users, it would provide incentives for current riders to use transit more, both because transit services would be improved and the cost of driving would increase. Residents who currently do not use transit would have a strong incentive to consider using the system. If the tax were applied citywide businesses would have an incentive to locate in transit oriented areas, because it would decrease their parking needs. However, if the tax were isolated to the CBD, perhaps the most transit oriented area in the region, businesses would have an incentive to locate in less transit friendly areas.

If designed as a municipal match, the off-street commercial vehicle tax has the potential to improve CTA's service levels. The parking tax simultaneously reduces the burden of the cost recovery ratio and generates subsidy for new services. There is a risk that the parking fee will make CTA managers advocates for increased parking; however, the CTA has not typically had a major influence on the City's parking policies.[30]

## Political Feasibility

The following section uses the funding evaluation framework to consider whether adding a transit fee to the personal vehicle registration is politically feasible now or in the future.

*Funding Evaluation Framework*

- Are there legal or institutional barriers to implementing the funding alternative?
- Who would administer the tax? Who would levy the tax?
- Is the tax broad-based? Does it have the potential to stimulate broad symbolic anti-tax opposition?
- Is the tax focused on powerful interest groups (e.g., businesses) likely to generate sustained well-financed opposition?
- If the funding source is not currently feasible, could it be politically feasible in the future, given a favorable set of circumstances?

The author was not able to determine if there are any legal barriers associated with taxing off-street commercial parking spaces. It is not likely that there are legal barriers in the CBD because most of the lots already charge for parking; however, there may be existing regulations that prohibit this type of tax outside of the CBD. A variety of parties could levy the tax, including the County or the RTA. If applied citywide, the author suggests that Chicago levy the tax, potentially in exchange for a portion of the revenue. If the City administers the tax, the revenue will count as a municipal match, which will ease CTA's cost recovery burden significantly.

It is likely that the tax will generate strong opposition from businesses and commuters. To fuel consumer resistance the pay lots may initially overcharge. If businesses bear the burden of the tax, they are likely to fight hard against it. During the last tax increase, several newspapers reported that the consumer bore the burden of the charge, claiming "rates have climbed as much as 23 percent, as some garage owners have tacked price increases onto the new county parking tax" (Klein, 2001). Even the threat of key businesses leaving the city could weaken political support for the tax. The CTA's best case would be to initiate highly visible service improvements with the new subsidy. The public may be more forgiving of the tax if they see a direct improvement in their transit alternatives.

[30] Recently, the CTA tried to influence the City to reduce the proposed parking minimums in the recent zoning update. Unfortunately, they were not able to effect the proposed changes and the parking minimums are slated to increase.

It is not likely that Mayor Daley will agree to an off-street commercial vehicle tax at this time because he has been hesitant to raise taxes. Furthermore, this tax has a lot of unknowns, including how it will influence long-term business location decisions. This funding alternative may gain support in the future if the CTA management can point to other cities that have implemented it successfully. It may also be more appealing in the future if a strong connection can be made between this type of tax and London's high profile congestion pricing scheme. The following section presents a case study from Perth, Australia, one of the only regions to successfully implement this type of tax. Toronto, Canada is currently considering a similar program to supplement their transit funding (IntraVISTAS Consulting, 2003).

## Learning from Perth

In 1999, Perth, Australia became one of the first major cities in the world to employ a parking license fee. Perth is one of the most car dependent cities in the world with 679 vehicles of all types registered per 1000 people compared to 516 per 1000 people in Cook County (Enoch, 2001 & Illinois Driver Services Department Website, 2004). To address the high level of automobile use, the State Government of Western Australia and the City of Perth explored various policy measures including the implementation of a parking license fee. The final plan called for taxing all parking except private off-street residential. Exemptions are granted to loading/unloading spaces, bus layovers, non-profit transport services (e.g. patient transfer services), and spaces which are incidental to the prime business activity (e.g. car dealership). In addition, small businesses with less than six parking spaces on its premises are exempt from the tax. By granting exemptions to small businesses, the amount of license holders was reduced by more than a third while only a small loss in revenue was incurred, simplifying the administrative management of the tax (Enoch, 2001).

The annual tax rate set in 1999 was $A70 ($46.86 in 1999 USD). This was increased in July 2001 to $A120 ($62.30 in 2001 USD). In the first year of operation, the tax generated $A3.4 million ($2.1 million in USD) and parking supply fell by nearly 6,000 spaces or 10 percent of the total supply. The money raised from the tax is earmarked to fund the Central Area Transit bus system – creating a clear link between the tax and the benefit. Earmarking funds and creating a free public transit zone contributed to the smooth implementation of the tax.[31]

Based on the analysis performed on the parking tax, the author suggests that the city look for opportunities to shift from the current ad valorum tax to a flat tax. If the Mayor is hesitant to raise taxes, he could make this shift revenue even. Even if the net tax is not increased, the City should gain some additional revenue simply because the flat tax is easier to administer and harder to defraud. Once the flat tax is in place, the City could begin experimenting with changes in the rate. Slow increases will minimize behavioral changes, while still increasing subsidy levels for transit. After the initial phases, the City could also consider implementing the tax city or countywide. A tiered funding structure would need to be developed to capture the relative land values in different areas. Once a permanent rate is identified, this tax should be indexed to inflation to ensure long term effectiveness.

[31] This text was prepared by undergraduate researcher Tejus Kothari.

# 6. CONCLUSIONS

This chapter highlights the key conclusions that resulted from this research project. The first section presents a summary of the challenges that the Chicago Transit Authority and the greater region must overcome in order to maintain a thriving transit system. The second section provides the authors recommendations for actions the Chicago Transit Authority and the rest of the region should pursue in an effort to meet the challenges identified in Section 6.1. The final section identifies areas for future research.

## 6.1 REGIONAL CHALLENGES

The bullet points below summarize the organizational and funding challenges that the CTA and the greater Chicago Metropolitan Area must confront:

- **Failure to meet transit goals.** Although CTA enjoyed modest increases in ridership in recent years, over the 25 year lifetime of the RTA the region has failed to meet the basic goals of transit. A 30 percent decline in ridership, a declining mode share, increasing congestion, and an unmet demand for paratransit are evidence that the RTA has failed to meet the basic goals of transit, which are equity, congestion mitigation, land use changes, and pollution mitigation. The declining ridership is particularly troublesome considering that transit ridership nationally has increased modestly over the same 25 year period.
- **Ineffective organizational solution.** The current funding strategy emerged over 20 years ago in a time of fiscal crisis. While it is particularly outdated because of changing demographics and service needs of the region, it was flawed from inception because it always allocated a disproportionate amount of resources to commuter rail and forced the CTA to rely on large annual allocations of discretionary funds to avoid service cuts. Furthermore, it prioritized fiscal restraint at the expense of other more fundamental transit goals.
  - **Geographic formula is broken.** Distributing funds solely based on geography undermines the goals of regional transit because resource allocation is isolated from transit needs, providing no incentive to increase service. If RTA funding increases without revising the formula, there is no assurance that the CTA will receive any relief. The RTA might instead choose to transfer the additional discretionary resources to fund new capital projects.
  - **RTA has limited influence.** The current organizational and funding structure limits RTA's ability to influence the three service providers. RTA's power comes from their authority to approve budgets and allocate discretionary money. However, Metra currently does not receive any discretionary resources and is therefore unbound by the RTA's authority in any concrete way.
  - **RTA has suburban board.** The majority of the RTA board consists of suburban county members who do not have a vested interest in transit. Furthermore the urban area will likely lose its ability to block a supermajority as a result of the 2000 census.

  - **Wealthiest counties are subsidized the most.** By establishing that the collar counties would pay ¼ percent, while Cook County paid 1 percent in 1979, the Illinois legislature created an inequitable system where the most affluent parts of the region pay the least, while requiring the highest subsidy per trip.

- **Cost recovery is an incomplete performance measure.** The cost recovery ratio may have been a useful performance measure if used in conjunction with a more sophisticated set of evaluation techniques. However, as a stand alone device, it has failed to respond to the unique attributes of the different transit market segments. The cost recovery metric gives an unintended advantage to the rail system which serves the downtown and leads to poorer quality cross-town bus and paratransit services.
  - **Bus ridership has declined the most.** As a result of decisions supported by reliance on the cost recovery ratio, bus ridership has declined dramatically. While some of these riders may have switched to rail, most became automobile users, contributing to worsening regional congestion and air quality.
  - **Cost recovery is harder to achieve over time.** While total expenditures have declined, there is some evidence that the cost per bus revenue mile is increasing faster than inflation. Paratransit expenditures are also increasing faster than inflation and recover only a small portion of the cost of service through fare revenue. Both these trends will make the cost recovery ratio an even greater burden on the system in the future.

- **Subsidies have decreased over time.** While the cost recovery ratio has damaged the system over time, even if it were removed, the region would still not have enough resources to undo the negative trends caused by 25 years of disinvestment. Subsidy levels have declined as a result of several factors including:
  - **Shrinking tax base in Chicago.** Shifting demographics in the region, which have translated into a shrinking tax base in the City of Chicago, have altered the original funding formula. This means that the CTA receives a declining share of the regional transit resources.
  - **Loss of federal operating funding.** The RTA has not effectively responded to the loss of federal funding, the majority of which benefited the Chicago Transit Authority. Since 1985, the CTA has lost $99 million (in 2003 dollars) and been given new paratransit responsibilities, expected to cost $56 million in 2004.
  - **Influential interest groups drive up costs.** In the 1970s, labor and other special interest groups contributed to escalating operating costs as a response to newly available subsidies. New sources will always be vulnerable, but performance measures and other tools are available to offset this negative impact.

## 6.2 Recommendations for the CTA

The problems identified above can only be resolved if the Chicago region acknowledges that it faces a public transit crisis. As with many other public amenities, stimulating regional support for transit is difficult because while the benefits tend to be abstract, the costs are quite concrete. Furthermore, the current system is so out of balance that any change will produce fairly obvious winners and losers. Capturing regional attention represents the greatest challenge of all for the

CTA because while the Regional Transportation Authority and the CTA should be allies, they are actually working at cross purposes. Furthermore, because the CTA is bearing the brunt of the crisis, they are not receiving needed support from the other two service providers, Metra and Pace. To achieve any real change, the CTA must look to outside forces for political support. The CTA has already begun this process through its interactions with the Governor's Regional Task Force. For example, when giving testimony to the task force, CTA President Frank Kruesi focused his presentation around regional challenges, such as congestion and ridership loss, rather than waging a battle against Metra.

While the task force has been hesitant to acknowledge the funding problem, they have suggested some changes such as combining Metra and Pace and/or restructuring the RTA Board. If at all possible, these organizational changes should be exploited as an opportunity to modify the status quo and revisit the funding formulas. Regardless of how CTA views the proposed merger, it should embrace the concept and leverage the changes as an opportune moment to fix other problems. Working with the task force is a start, but the CTA should also look to bring new players to the debate to support their case that the region is in crisis. Potential allies include Pace, disability advocates, and the environmental community. CTA should also continue to build their relationship with civic leaders.

Avoiding a short term CTA fare raise will require approximately $50 million. Almost all of the funding alternatives presented in this report could accomplish that goal including the transit fee, a parking tax, or a federal demonstration project. If the region seeks more aggressive goals, such as building mode share or even maintaining ridership at 2004 levels, it will need new allocation mechanisms and additional resources. This research did not quantify the level of resources necessary to maintain current ridership or buy back transit's lost mode share. Still, it is clear that a large increase in current subsidies would be needed and the cost recovery ratio would have to be relaxed, if not eliminated. The following sections present detailed recommendations for how the region might change to better meet the long-term goals of transit.

## Change the current distribution formula

In order to ensure that the suburbs remain engaged in the regional transportation system, it is vital that a portion of the transit resources continue to be distributed based on a geographic formula. However, the formula should correct the current problems by recognizing the service needs of the region and reducing CTA's reliance on discretionary resources. Unless the formula changes, there are no guarantees that the CTA will be the beneficiary of increased resources. Furthermore, if no change is made the CTA will suffer increasingly over time as the urban sales tax base continues to decline.

Based on an analysis of the 2004 combined formula and discretionary resources the geographic funds should be distributed based on the following ratios: 59.6 percent to the CTA, 30.1 percent to Metra, and 10.2 percent to PACE. Simplifying the formula so that all of the resources are pooled and then distributed will retain the geographic element of the funding while downplaying cross-subsidy concerns. It will also give the three service providers an incentive to work together to increase funds. Based on the old system, the suburbs have little incentive to lobby

for increased funding in the City of Chicago, because 100 percent of the resources go to the CTA. Conversely, Chicago does not directly benefit from increasing collar county funds.

## Develop performance measures for distinct markets

The formula money should be complemented with an increased pool of resources that the RTA distributes based on a set of statutory performance measures. Rather than focusing exclusively on the cost recovery ratio, which risks the long-term vitality of the system, the RTA should develop a transparent set of performance measures that maximize efficiencies within markets. For example, resources to the bus system might be allocated based on criteria that promote efficient bus investment such as revenue-vehicle hours and reliability, while the commuter systems might focus on passenger miles and schedule adherence. The key market segments include downtown peak service (feeder buses, CTA rail & Metra commuter rail), non-downtown bus service (CTA and Pace Bus), off-peak rail (CTA & Metra), and paratransit. Having market-specific performance measures controls regional costs, while still protecting weaker segments such as bus and paratransit. These market segment performance measures should be complemented with regional performance measures, such as mode share, congestion, and air quality and the RTA should have some flexibility to modify the market segment performance measures to better meet these regional transit goals. The region should not wait another 25 years to recognize that their metrics are measuring the wrong things.

## Increase RTA Revenues

While a necessary first step, solely modifying the allocation strategies is not likely to reverse the negative trends in ridership and congestion. To overcome these challenges, the region must identify new revenue sources. Increasing the collar county sales tax represents the best alternative for raising a significant amount of resources. Currently, the collar counties pay the least, yet riders from collar counties require the highest level of subsidy per ride. The most lucrative scenario equalizes sales taxes throughout the region, so all six counties pay 1 percent. This would restore horizontal equity to the region and help buy back a portion of the riders lost over the last 30 years, but may not be politically feasible. As an alternative, the region should focus on increasing the contributions of DuPage and Lake Counties. These counties have the highest per capita income in the region and receive a relatively high level of service (on par with suburban Cook). Combined they represent two-thirds of the collar county resources. Because they have a higher transit mode share than Will, Kane, and McHenry County, it may be easier to justify an increased transit investment. Furthermore, because DuPage and Lake's combined sales tax base is increasing faster than inflation the region will have an opportunity to expand services over time.

If the individual service agencies continue to provide paratransit services, the money should be allocated using the combined formula/performance measures method described in the previous two sections and presented in Table 6-1. The resources to be divided by performance measures are presented as a lump sum, because more research is needed to determine which measures are appropriate for each market segment. As Table 6-1 indicates, the geographic formula brings the service providers close, but not all the way to current funding levels. Presently the CTA

receives $462 million, Metra receives $233 million, and Pace receives $79 million. However, the money distributed by statutory performance measures will easily make up the difference, ensuring that nobody is worse off under the new system than they were in 2004. This objective can only be realized if more subsidies are introduced into the system.

***Table 6-1. Recommended Strategy for Allocating Regional Sales Tax Resources***

| | 1% Cook<br>0.5% DuPage, Lake<br>0.25% Will, Kane, McHenry | 1% Cook<br>0.75% DuPage, Lake<br>0.25% Will, Kane, McHenry | 1% Cook<br>1% DuPage, Lake<br>0.25% Will, Kane, McHenry |
|---|---|---|---|
| ▪ GF: CTA | $375,898,000 | $410,916,000 | $445,934,000 |
| ▪ GF: Metra | $189,523,000 | $207,179,000 | $224,835,000 |
| ▪ GF: Pace | $64,224,000 | $70,207,000 | $76,190,000 |
| Performance | $230,484,000 | $258,087,000 | $285,691,000 |
| RTA Internal | $65,820,000 | $65,820,000 | $65,820,000 |
| Total Funds | $925,949,000 | $1,012,209,000 | $1,098,470,000 |
| New Funds | $86,260,000 | $172,520,000 | $258,780,000 |

GF = Geographically-Based Formula Funds

Alternatively, the RTA should consider assuming the region's paratransit responsibility and contract out competitively to Pace and private operators. Regional consolidation will lead to cost efficiencies and needed service expansions. The regional paratransit expenditures range from $75 to $100 million dollars, but will likely increase over time. The analysis in Table 6-2 allocates $85 million to paratransit, which decreases the resources that are distributed by statutory performance measures.

***Table 6-2. Recommended Strategy for Allocating Sales Tax - RTA Administers Paratransit***

| | 1% Cook<br>0.5% DuPage, Lake<br>0.25% Will, Kane, McHenry | 1% Cook<br>0.75% DuPage, Lake<br>0.25% Will, Kane, McHenry | 1% Cook<br>1% DuPage, Lake<br>0.25% Will, Kane, McHenry |
|---|---|---|---|
| ▪ GF: CTA | $375,898,000 | $410,916,000 | $445,934,000 |
| ▪ GF: Metra | $189,523,000 | $207,179,000 | $224,835,000 |
| ▪ GF: Pace | $64,224,000 | $70,207,000 | $76,190,000 |
| Performance | $145,484,000 | $173,087,000 | $200,691,000 |
| RTA Internal | $65,820,000 | $65,820,000 | $65,820,000 |
| RTA Paratransit | $85,000,000 | $85,000,000 | $85,000,000 |
| Total Funds | $925,949,000 | $1,012,209,000 | $1,098,470,000 |
| New Funds | $86,260,000 | $172,520,000 | $258,780,000 |

GF = Geographically-Based Formula Funds

## Include a Transit Pass with Automobile Registration

In addition to having resources distributed by formula and statutory performance measures, the RTA should also have some discretionary resources to allocate based on a more flexible process. This funding source should be expandable over time to allow the RTA to better respond to the region's transit needs.

Including a prepaid transit pass with the automobile registration represents an excellent discretionary funding source for the RTA. When automobile owners paid for their automobile registration, they would also have to pay for a transit pass. Having people prepay for transit services will provide an incentive for replacing some automobile trips. If raised gradually over time, it can represent an expandable long-term funding source. In the short-term, it prioritizes fare integration between the three service providers. A $30 dollar regional surcharge will generate $104 million dollars. Approximately $10 million will be used by current transit riders, lowering the net revenue to $94 million. If the fee were raised to $40 dollars, the region stands to net approximately $130 million.

The new RTA discretionary resources should be allocated based on a transparent process established for the service providers to compete to meet the regions transit goals. Evaluation criteria might consider the proposal's ability to:

- Increase ridership
- Reduce congestion
- Improve air quality
- Encourage interagency coordination

- Increase services for transit dependent riders including people who cannot afford an automobile and people with disabilities

The RTA may also want to expand the subsidy opportunities to include transit supportive improvements, such as pedestrian access to transit stations. Allowing suburban resources to be used for sidewalk, landscaping and street improvements will widen the constituent base for transit.

### Develop Federal Proposals

Because there are no guarantees that the above recommendations will be implemented, the CTA should also develop a proposal for federal operating subsidies. If the agency chooses to focus on operating resources, it could enlist the support of the American Public Transportation Association (APTA) and other transit properties. Alternatively, the CTA could develop a proposal for an operations demonstration project. For example, the federal government could pay the transit surcharge envisioned as part of the personal vehicle registration fee. This program may capture the interest of Congress because of its potential to increase ridership by introducing automobile drivers to transit.

Regardless of which initiatives/strategies it chooses to focus on, the CTA faces an uphill battle to increase suburban support for transit and to modify existing structural problems that affect them more than other agencies. Focusing on the regional benefits of transit and attempting to tap into a variety of subsidy alternatives is the best strategy for overcoming these odds. Other promising revenue generators should be considered in the future to enable the RTA to address the larger problem of declining mode share and increasing congestion.

## 6.3 Future Research

Based on the findings of this report, the author has several recommendations for future research:

- Several parts of this report refer to the benefits of tying transit resources to market segment performance measures. Additional research is needed to determine which performance measures work best for each market segment. The most challenging part of this research will be to identify performance measures for qualitative aspects of system performance, such as customer satisfaction.
- This research identified eleven funding alternatives, but only investigates three in detail. The CTA would benefit from a more thorough investigation of several of these funding mechanisms. The author also hopes the Funding Evaluation Framework will be useful for investigating future funding alternatives not discussed in this report.

- More research is needed to determine if a flat parking tax is a viable subsidy source for Chicagoland transit. To effectively carry out this investigation, the CTA and/or outside researchers would need to determine how many off-street commercial parking spaces exist in the region. The elasticity of the demand for parking also needs further investigation to determine who would bear the incidence of a parking tax. This information is also needed to understand how suppliers and consumers will respond to this type of tax.
- The unit costs of bus and rail service also stand out as critical areas for future research. While this investigation did identify a negative trend in bus expenditures, more research is needed to verify this trend and isolate the causes. If the research proves that the bus operating cost per revenue mile are increasing, future research will be needed to identify a series of tools for the CTA to use to mitigate this expense without having to reduce bus service. Signal priority and similar productivity enhancements offer real potential to control bus unit costs while enhancing service.
- This research briefly touched on the problems associated with the RTA Board. However, a more thorough investigation of the board structure is needed to identify a preferred alternative. One suggestion might be to increase the governor's involvement in the selection process; however, this could also be detrimental if the governor aligns themselves with suburban or downstate interests. Evaluating the benefits and drawbacks of having separate service provider boards should also be included in this research.
- In Section 5.3 the author presents the possibility of including an annual transit pass with their vehicle registration. This concept, which would essentially make transit free in Chicago, requires extensive research to evaluate issues such as cost and equity. If feasible, however, it could revolutionize transit in the United States.
- Finally, this research concentrated on how the CTA could increase subsidy levels, but it did not attempt to project how much subsidy would be needed to accomplish specific goals. Additional investigation is needed to determine how much subsidy is needed and how theses subsidies should be allocated to maintain ridership, increase ridership, and/or increase mode share.

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# APPENDIX B: LIST OF INTERVIEWS

The following interviews were conducted in person or over the phone to support the findings in this document. The author is grateful for the time and resources provided by the following participants:

- Thomas Bamonte, Chicago Transit Authority
- Shelby Chodos, Harvard University
- Michael Connelly, Chicago Transit Authority
- Linda Fuller, Chicago Transit Authority
- Jackie Grimshaw, Center for Neighborhood Technology
- Frank Kruesi, Chicago Transit Authority
- James LaBelle, Chicago Metropolis 2020
- Jason Lee, Chicago Transit Authority
- Frank Levy, Massachusetts Institute of Technology
- Bill Lyons, Volpe National Transportation Systems Center
- Reginaldo Montague, Chicago Transit Authority
- Kevin O'Malley, Chicago Transit Authority
- Lynn R. Otte, Multisystems, Inc.
- Fred Salvucci, Massachusetts Institute of Technology
- Lynn Sapyta, Chicago Transit Authority
- Ian Savage, Northwestern University
- Michael Shiffer, Chicago Transit Authority
- Jeffrey Sriver, Chicago Transit Authority
- David Urbanczyk, Chicago Transit Authority
- Sidney Weseman, Regional Transportation Authority
- Nigel Wilson, Massachusetts Institute of Technology
- Deanna Zalas, Chicago Transit Authority

# APPENDIX C: ACRONYMS

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|---|---|
| APTA | American Public Transportation Association |
| CATS | Chicago Area Transportation Study |
| CBD | Central Business District |
| CDOT | Chicago Department of Transportation |
| CTA | Chicago Transit Authority |
| FTA | Federal Transit Administration |
| Metra | Northeast Illinois Regional Commuter Railroad Corporation |
| NTD | National Transit Database |
| Pace | Pace Suburban Bus Division |
| PTF | Public Transportation Funds |
| RTA | Regional Transportation Authority |
| TCRP | Transit Cooperative Research Program |