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Light-Rail in Louisville: Assessing the Financial Feasibility of Mass Transit

Brian K. Howell
University of Kentucky

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Brian Howell
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EXECUTIVE SUMMARY

The Louisville-Jefferson County area encompasses a vast area and large population of citizens. To meet the transportation needs of this growing city, the Transit Authority of River City or TARC undertook a study in 1996 to determine potential transportation solutions to traffic congestion in the area. Based on their analysis, TARC determined that a 15-mile light rail transit system would best service their needs. This light rail system would run from the downtown central business district to a park-and-ride facility at the Gene Snyder Freeway.

Prior to undertaking this project, TARC and all those parties involved should ask the fundamental question: Can we afford the high cost of this project? This capstone sought the answer to that very question. A thorough and exhaustive financial condition analysis was performed on a focus group of US cities that currently have light rail systems in existence. Local municipal governments were examined across this focus group to best ascertain the financial condition of the community at large. This financial condition analysis incorporated various financial factors. These financial factors included measures relating to revenues, expenditures, debt capacity, and operations.

Based on the results of this study, we can conclude that the community of Louisville can justify the construction of a light rail transit system. This means that the project would be financially feasible. This does not mean that a light rail transit system in Louisville would enjoy great success with the community (i.e.- high ridership rates). Currently, funding for this project has been put on indefinite hold due to the allocation of several billion dollars to the Louisville Two Bridges project.

Despite this setback, the light rail project issue may gain traction again in the future as the political winds change. If this happens, the extreme magnitude and scale of light rail transit would impose a large financial toll on TARC. As such, the second phase of this capstone comes up with a list of comparable cities to Louisville. Those seven cities included the communities of Boston, Buffalo, Dallas, Denver, Houston, Portland, and St Louis. The transit authorities from those respective cities were then evaluated one by one to determine likely financial scenarios for

TARC. Specifically, the capstone sought to determine viable revenue and expenditure scenarios should this project become a reality. For example, what might TARC expect to pay in terms of operating and capital expenses? From the revenue perspective, where are these sources of funds going to come from?

Each transit authority, acting as an independent body in charge of local transit, provides reasonable comparisons for projecting expenditures and providing possible revenue models. Pertinent information obtained from the Federal Transit Administration's (FTA) National Transit Database is used in conjunction with financial statements from the various transit authorities. On the expenditure side, it initially appears TARC has underestimated what it expects to pay in annual operating costs. On the revenue side, there are many options for source funding but a sales tax model and a municipal payroll tax model remain the most likely choices for TARC.

INTRODUCTION

Problem Statement

As the city of Louisville continues its push to become a major metropolitan area in the United States, it faces many difficult budgetary choices in its short- and long-term futures. One such choice entails how to best serve the transportation needs of the city. To this extent, the Transit Authority of River City, or TARC, has advocated the installation of a light-rail system in the city to complement its already extensive bus route system. But for now, the fast-track and priority "Ohio River Bridges" project in Louisville has depleted potential federal funding for such a light-rail system. Future funding sources must be found before such a large-scale project can be initiated.

Motivation for Research

Due to the large-scale expense in creating and maintaining a light-rail transit system, it is important that the city of Louisville have an adequate finance structure in place to carry such a burden. Initially, federal and state funding would be necessary for the majority of up-front capital costs to build such an expensive infrastructure project. Once in place, operating costs would be supported through multiple revenue streams including transit fares, local finances, and miscellaneous streams (e.g.- federal or state). There are currently twenty cities in the US with light-rail cities already in place.

This capstone project will demonstrate the financial costs imposed on US cities with light-rail systems and the alternative finance structures each city has in place to maintain its transit system. Demonstrating the current state of practice for transit finance will leave the city of Louisville better informed about what subsidies might be needed that will not simply be covered by internal fares. Through a comprehensive list of financial, metropolitan, and transit measures detailed below, this paper will examine other light-rail city's operating costs for their respective systems. From this financial condition analysis, it can be determined whether the construction of a light rail system in Louisville would be financially feasible.

The second part of my paper analyzes the expenditures and revenues of transit authorities in these corresponding cities. Alternative funding scenarios are utilized as potential projections for a future Louisville transit funding operation. Current costs from existing systems can project what costs might be inherent in a Louisville transit system. Finally, potential revenue sources will be evaluated across the transit authorities of interest to determine potential funding options for the Louisville transit system.

Research Questions

Is a light-rail system in Louisville financially feasible in relation to existing cities with light-rail systems? What possible expenditures might Louisville expect with such a system, both in terms of operating and capital costs? To finance this venture, what revenue source options do other transit authorities currently use in their innovative financing?

LITERATURE REVIEW

Financial Condition Analysis Background

Each fiscal year, local municipal governments must strive to meet the financial needs of their local community. The overall financial condition of a municipality will ultimately dictate whether they are successful in meeting that mission. Many factors may contribute to this, including: trends in revenue inflows and expenditure outflows, demographic changes, population growth or decreases, economic conditions, etc. The noted financial expert Robert Berne has stated financial condition as follows:[1]

> "The probability that a government will meet both (a) its financial obligations to creditors, consumers, employees, taxpayers, suppliers, constituents, and others as they become due and (b) the service obligations to constituents, both currently and in the future."

Despite having taxing authority, local governments are often limited in their ability to raise tax rates. As one might suspect, limited citizen wealth and political pressure converge to keep taxes at a reasonably low rate. To this extent, it becomes critical for local governments to behave fiscally responsibly with taxes and other revenue sources available. Local governments must also behave diligently to contend with any potential problems down the line. Governments must be able to weather downturns in the economy, identify fiscal trends, and see potential issues before they materialize.[2]

The primary mechanism for local financial analysis can be found in the Comprehensive Annual Financial Report or CAFR of local governments. The CAFR provides a wealth of financial information to those surveying its contents. In general, CAFRs should provide information on tax rates, property values, revenue and expenditure trends, debt capacity (and service), and many other financial and demographic information.

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[1] Finkler, Steven A. Financial Management for Public, Health, and Not-for-Profit Organizations. 2nd ed. Prentice Hall, October 2004.
[2] Comptroller Hevesi, Alan. Local Government Management Guide: Financial Condition Analysis. State of New York Comptroller, April 2003.

Comprehensive annual financial reports all follow Generally Accepted Accounting Principles or GAAP. These standard rules of accounting are instituted by the Governmental Accounting Standards Board better known as GASB.[3] Recently in June 1999, GASB initiated new standards of accounting for local governments under Statement No. 34. Due to this new standard, all CAFRs prior to the implementation date of June 15, 2001 (phase 1 cities) follow the old accounting rules and are non-comparable to those produced thereafter. Ultimately, this determined the data range of financial indicators used in this report.

In the CAFR, the bulk of financial information can be located in the statement of net assets and the statement of activities. The statement of net assets lists the financial condition of a given city at a specific moment in time, typically the end of a fiscal year. The statement of activities shows all of the "activities" for a city over the course of a fiscal year in terms of revenues and expenditures. Both of these basic financial statements from the individual CAFRs in our cities contributed to our compilation CAFR dataset. For a more detailed description of GASB and financial statements, please refer to Appendix A.

Transit Background

Traffic congestion is a growing problem that continues to plague our nation's transportation system, especially in urban and suburban areas. According to the Texas Transportation Institute, between 1982 and 2002, the annual hours of delay per peak hour traveler increased from 16 to 46 hours, the total hours of delay from .7 to 3.5 billion and the estimated cost of congestion in billions of 2002 dollars from 14.2 to 63.2 dollars.[4] This is due to a surge in the number of vehicle miles traveled by Americans that is far greater than the rise in the number of lane miles available. The nation's highway departments and agencies cannot keep pace with the rising number of drivers. To this extent, they have neither the available right-of-way nor the financial capacity to solve the congestion problem by building new lane miles of highways. To counter this trend, many metropolitan areas across the nation are increasingly turning to mass transit to help alleviate their transportation woes.

[3] Governmental Accounting Standards Board. Home page. March 2006. <www.gasb.org>.
[4] Lomax, Tim and Schrank, David. 2004 Urban Mobility Report. Texas Transportation Institute, Texas A&M. College Station, September 2004. <http://downloads.transportation.org/2004UrbanMobilityReport.pdf>.

Simply stated, mass transit involves the use of transportation infrastructure to efficiently move large quantities of people in a cost-effective manner. Mass transit can encompass many modes of transportation including bus systems, commuter rail, heavy rail, light rail, ferry boats, and other modes. For the purposes of this study, the focus will rely on light rail systems.

As stated by the Federal Transit Administration[5], light rail has the following characteristics: electric railway with single passenger cars (or two-car trains), shared or exclusive right-of-way, overhead electric wire, and moderate passenger volumes.[6] Light rail transit differs from commuter and heavy rail systems on several measures. Commuter and heavy rail transit systems both typically have exclusive right-of-ways, high passenger volumes, and multiple passenger cars. Commuter systems focus on transporting passengers between urban centers and adjacent suburbs while heavy rail systems are often subways (i.e.- DC Metro) providing transit throughout the city limits.

The Transit Authority of River City (TARC) has recently advocated the construction of a light rail transit system for the Louisville metropolitan area. TARC, a component unit of Louisville-Jefferson County Government, proposed to design and construct a 15-mile track facility to service Louisville's transit needs. This track facility would run from the central business district to a park-and-ride facility at the Gene Snyder Freeway (map located in Appendix B). At present time, this project has been put on indefinite hold due to lack of funds available.

Despite funding constraints, this project has been listed as a high priority by the city of Louisville. Since 1996, TARC has worked with the Kentuckiana Regional Planning and Development Agency (KIPDA) and the Kentucky Transportation Cabinet (KTC) on feasibility studies and financing avenues for said project.[7] This capstone seeks to better understand how

[5] The Federal Transit Administration (FTA) is one of ten administrations falling under the US Department of Transportation. This agency acts as the authoritative agency for the federal government on transit matters. They can provide federal financial assistance to existing or new transit projects through grant allocations. Finally, the FTA monitors transit agencies for compliance with federal requirements and mandates regarding transit.
[6] National Transit Database. 2004 National Transit Summaries and Trends. Federal Transit Administration. US Dept. of Trans. March 2006. <http://www.ntdprogram.com/NTD/NTST.nsf/Web/NTST2004?OpenDocument>.
[7] New Starts Project Planning and Development. Louisville, Kentucky, Transportation Tomorrow South Central Corridor LRT. Federal Transit Administration. US Dept. of Trans. 2003. <http:www.fta.dot.gov/grant_programs/specific_grant_programs/major_capital_investments/new_starts/10279_10956_ENG_HTML.htm>.

this might affect the city of Louisville finances. As such, this study evaluates other light rail systems in the US currently in existence.[8] This listing of cities was obtained through the American Public Transportation Association (APTA) database.[9] Table 1 provides a detailed list of the existing light rail systems in the United States.

Table 1

Existing Light Rail Systems in the US			
	City	*State*	*Transit System*
1	Baltimore	Maryland	Maryland Transit Administration (MTA)
2	Boston	Massachusetts	Massachusetts Bay Transportation Authority (MBTA)
3	Buffalo	New York	Niagara Frontier Transportation Authority (NFTA)
4	Cleveland	Ohio	Greater Cleveland Regional Transit Authority (RTA)
5	Dallas	Texas	Dallas Area Rapid Transit (DART)
6	Denver	Colorado	Regional Transportation District (RTD)
7	Houston	Texas	Metropolitan Transit Authority of Harris County (Metro)
8	Los Angeles	California	Los Angeles County Metropolitan Transportation Authority (MTA)
9	Minneapolis	Minnesota	Metro Transit (MT)
10	Philadelphia	Pennsylvania	Southeastern Pennsylvania Transportation Authority (SEPTA)
11	Portland	Oregon	Tri-County Metropolitan Transportation District of Oregon (TriMet)
12	Sacramento	California	Sacramento Regional Transit District (SRTD)
13	Saint Louis	Missouri	Bi-State Development Agency (Metro)
14	Salt Lake City	Utah	Utah Transit Authority (UTA)
15	San Diego	California	San Diego Trolley (SDT)
16	San Francisco	California	San Francisco Municipal Transportation Agency (Muni)
17	San Jose	California	Santa Clara Valley Transportation Authority (VTA)

***New Jersey Transit Corporation (Newark, NJ), Port Authority of Allegheny County (Pittsburgh, PA), and Central Puget Sound Regional Transit Authority (Seattle/Tacoma, WA) were excluded from this list due to difficulties in obtaining readily available data.

[8] US Light Rail Transit System Links. Existing Systems. American Public Transportation Association. March 2006. <http://www.apta.com/links/transit_by_mode/lightrail.cfm>.

[9] The American Public Transportation Association or APTA is a non-profit, trade association advocating the use of public transit. Its members include the ranks of government officials, transit system personnel, and the business community. It is generally considered the leading public transit association.

METHODOLOGY

Design Structure

This project will assess the financial feasibility of the local government in Louisville in relation to other US cities that currently have light-rail transit. This financial analysis will address the issue through a comprehensive financial condition analysis. The financial condition analysis will examine the ongoing finances of these cities through the Comprehensive Annual Financial Report (CAFR) provided each fiscal year. Additionally, metropolitan characteristics in the context of financial condition analysis will be included in the evaluation.

It should be noted that transit authorities are individual sovereign governments and therefore have their own audited financial statements. Revenues, expenditures, and overall finances are shown on a jurisdiction-wide basis in these financial statements. The jurisdictional area in the majority of these cases leans heavily upon the main metropolitan service area (i.e.- the main focus city). But as time goes by, many jurisdictions become larger as transit service expands outward to adjacent communities. Through voter referendums and other mechanisms, additional communities might be added to the jurisdiction of the transit authority.

To this effect, each transit authority is distinctly unique from another. Some transit systems reside strictly within city boundaries. Others connect one community to the next. In those instances, the transit service area (or jurisdiction) remains an agglomeration of nearby local communities all in near proximity to the main host city. While it would be ideal to evaluate the complete finances of each local government located in a transit authority's jurisdiction, this dataset would be extremely large and cumbersome to obtain. Furthermore, it goes beyond the scope and time resources available for successful completion of this type of capstone. Therefore in order to make reasonable comparisons with Louisville, this capstone will defer to the focus cities' comprehensive annual financial reports as the first step. This initial process will form the basis of finding our comparison cities.

To this extent, the main metropolitan financial statements will serve as a reasonable proxy for the various financial entities within a jurisdiction. There are several reasons why this extrapolation

can serve as a reasonable proxy. Both transit authorities and the large metropolitan cities in this study have large overlapping tax bases. As such, both have internal constraints placed on them in their ability to raise taxes. They are both interdependent on one another in this way. One entity cannot significantly raise taxes without affecting the ability of the other entity to collect its taxes. To this extent, each must consider the financial characteristics of the other before deciding on financial matters. Secondly, many of the cities in this study have large metropolitan areas. Cities such as Denver, Boston, Philadelphia, Los Angeles, Sacramento, San Diego and San Francisco all have merged city-county governments making their comparison with Louisville more plausible. Lastly, transit authorities are financed through a multitude of revenue streams. User fees, federal and state grants, advertising revenues, and various other sources all contribute to a transit authority's budget along with a dedicated tax source.

In the final portion of analysis, the individual transit authorities' financial statements are examined for the subset (seven) of comparison cities. Revenues and expenditures are extracted to provide a basis of comparison. Probably expenditure scenarios in terms of capital and operating costs are then projected. Last of all, revenue sources contribute to potential scenarios in the case of how TARC might finance such a light rail system.

Units of Analysis

For this capstone, the period from 2002-2005 will be examined. This is due to GASB Statement 34 which required all local governments to standardize their financial statements (see Appendix A for more details). To this extent, all local CAFRs prior to June 1, 2002 are not comparable to those after this deadline. Each city in this study meets this GASB 34, phase I timeline. The following factors will be incorporated into the analysis:

Financial Indicators:

- Fiscal Capacity
  - Revenues from own sources / median family income
  - Revenues from own sources / total appraised value of property

- Trends in Fund Balances
  - Operating deficit or surplus / total revenues
  - Fund balance / total revenues

- Trends in Stability of Revenues
    - Intergovernmental revenue / government activities revenue
    - Property tax revenue / government activities revenue
    - Intergovernmental revenues / total revenue
    - Property tax revenue / total revenue
    - Total revenues per capita
    - Tax revenues per capita

- Trends in Spending Patterns
    - Total expenditures per capita

- Ratio Analysis
    - Current Ratio (GO bonds + other liability debt)
    - Current Ratio (total debt)
    - Debt Burden (GO bonds + other liability debt)
    - Debt Burden (total)
    - Debt Service Burden
    - Risk Exposure Factor
    - Tax Leverage Factor (governmental activities)
    - Tax Leverage Factor (total)

Environmental Indicators

- Total population
- Population density
- Unemployment Rates

Rationale for Measures

The factors outlined above were chosen for their applicability in determining whether or not light-rail would be viable in Louisville. The first set of factors entail financial factors that outline the fiscal capacity of a local government. Many of these measures are performed during a typical financial condition analysis. The purpose of a financial condition analysis is to determine the financial shape of a local government. In more specific terms, a financial condition analysis helps determine whether a city generates enough revenue to successfully meet all of its short-term and long-term funding obligations. Issues such as revenue generation, debt service, debt capacity, bond ratings (for "cheap" loans), and the like all serve to give a financial picture of a city.

The second set of factors involves the characteristics of the local area. Basically, these factors are a snapshot of what could be found in the census on an area such as population figures, demographic breakdown, and prevailing economic conditions of the populace.

The financial and environmental indicators described above give implicit information on the state of the local government's financial condition. In fact, these factors were chosen due to their direct relevance in determining financial conditions of municipal governments. The International City/County Management Association, or ICMA, advocates these measures for use in financial condition analysis through their financial guide "Evaluating Financial Condition: A Handbook for Local Government".[10] This professional organization is comprised of local government public administrators seeking to educate city and county managers. They carry out their mission through training and publication of these financial guides to local government.

This handbook presents local governments with a methodology for carrying out a comprehensive and accurate financial condition analysis. Information from financial reports coupled with economic and demographic data lays the foundation for the measures utilized. ICMA recommends that each study be performed with three to five years of historical data. The scope of this study satisfies this minimum threshold requirement. To view the findings of this financial analysis, please refer to Appendix C in the back for tabular and graphical results.
In the following paragraphs, each indicator will be described in sufficient detail.

Financial Indicators:

Own Revenue Source Ratios: Revenues from own sources are those revenues that the local government generates internally. These revenues provide a higher degree of stability than those from outside organizations (federal/state/private). Some typical own revenue sources include the following: user fee charges, property taxes, income tax, and sales tax. The first ratio (own revenue sources to median family income) measures the ability of a city to raise taxes (Denison, interview). If additional revenues are needed, those cities with a lower ratio will most likely have an easier time increasing taxes if needed. Cities with high ratios that raise taxes risk

[10] Groves, Sanford M. and Valente, Maureen Godsey. Evaluating Financial Condition: A Handbook for Local Government. 4th ed. International City/County Management Association (ICMA). 2003.

negative population growth if people feel squeezed by the high tax rates. The second ratio (own revenue sources to total appraised value of property) measures the same principle with respect to assets instead of income.

Operating deficit or surplus / total revenues: This indicator shows if current fiscal year revenues are large enough to cover current year expenditures. Recurring deficits could signal a structural deficit in city finances and signal future problems going forward. Continual operating surpluses signal the government will continue to accumulate positive fund balances to meet future expenditure demands. Credit-rating firms evaluate this measure in their analysis.

Fund balance / total revenues: Fund balances are those revenues that are left over after all current-year liabilities have been met. Positive fund balances can be brought over to the next fiscal year to meet future expenditure demands. The larger the fund balance accumulation, the more likely a local government can withstand any fiscal emergencies in the future. Large ratios for this indicator demonstrate an ability to withstand unplanned financial expenditures without having to borrow through debt financing.

Intergovernmental revenue ratios: Intergovernmental revenues are those revenues derived from outside sources including the state and federal government. An over reliance on intergovernmental revenues could spell trouble down the road if either the state or federal government have their own budgetary dilemmas. A high ratio indicates the local government is extremely reliant on outside sources for funding. In such an instance, the local government might have to redirect money from the general fund or other internal revenue sources if intergovernmental revenues dry up. This ratio can be examined through the lens of primary government (government activities) or total government (government activities + business activities).

Property tax revenue ratio: As the principal source of own source revenue, an over reliance on this income as the chief source of revenue might present future problems if property values decline. This could happen if property taxes increase too rapidly so people relocate to adjacent areas outside of the tax base with lower rates. While this will always be a vital source of income

for local governments, a high ratio could be a warning sign. In order to minimize risk against drops in revenue, local governments should seek other revenue bases to accompany their property tax revenue.

Total revenues per capita: This indicator demonstrates how revenues are changing over time based on population changes. An increase in population could bring about an increase in local revenues through increased property, income, or sales taxes. Conversely, population growth could very well increase government expenditures for services. Therefore, it remains critical that revenues increase at a comparable or higher rate than population growth. A decline in this indicator over time signals that the local government will have a harder time meeting future obligations.

Tax revenues per capita: Much like the previous indicator, this factor shows how revenues derived from taxes may change over time with population changes. Tax revenues consist of local tax generation including property, income, sales, and miscellaneous taxes. Almost all city governments use this measure as a financial indicator. As before, a decline in this ratio over time dictates that the local government will have increased difficulties meeting future financial obligations.

Expenditures per capita: The rate at which the local government spends money in proportion to its population is reflected in this measure. Local governments with a high revenue per capita ratio might appear to be in sound fiscal shape at first glance. But if expenditures per capita are increasing at a faster rate than revenues per capita, the city begins to deplete its fund balances. This measure coupled with revenues per capita gives a better overall picture of the financial situation of the locality. The warning trend in this would show higher ratios over time.

Current Ratios: The formula for the current ratio can be stated as: cash and short-term investments divided by current liabilities. As such, this ratio indicates the ability of local government to meet its near-term financial obligations as a measure of liquidity. In the numerator, short-term assets include cash, accounts receivables, and inventories. For the denominator, short-term liabilities represent accounts payable, deferred revenue, and noncurrent

liabilities due within one year. The smaller this ratio, the less likely an organization will be able to pay off its near term obligations.

The first current ratio involving just general obligation bonds summed with other liability debt focuses on the ability of local government to meet its direct debt. That is, the debt at which the local government has "pledged its full faith and credit". In other words, the organization can raise taxes to support this debt in case of default. The second current ratio includes revenue bonds which are self-supporting, i.e.- user service charges, in nature. This ratio gives a better indicator of the government's overall ability to issue any new debt.

Debt Burden: As a measure of solvency, debt burden can be defined as total long-term debt per population. It is essentially debt per capita for the area. This solvency measure easily allows comparisons between local governments. Those cities with a high debt burden might have a harder time meeting their debt payments. Furthermore, high debt burdens will put a constraint on existing resources and lower a government's ability to withstand economic downturns, issue new debt for projects, and generally allow less flexibility in local finances. An increasing debt burden ratio over time might be a cause for alarm.

Debt Service Burden: The second measure of solvency involves the debt service burden ratio. Defined as total debt service divided by total revenues, it provides an indication to how much of the annual budget is going to pay off debt. The higher this ratio, the less flexibility the government has in allocating expenditures. Credit rating agencies make extensive use of this ratio when evaluating financial status. Generally, ten percent or lower is deemed normal. Ratios exceeding twenty percent could signal serious problems.

Risk Exposure Factor: As the name implies, this indicator seeks to measure the amount of risk local governments assume in their revenue streams. The formula for this, as shown in Finkler, can be stated as: (investment revenue + intergovernmental revenue + transfers in) / own revenue sources. Simply put, this factor evaluates those revenues the local government has no direct control over (in the numerator) to those that it does (own revenues sources). A high risk

exposure factor implies that local governments will have to find alternative revenue sources (ie- user fees, local taxes, etc.) if external revenues precipitously drop.

Tax Leverage Factor: This ratio can be shown as total operating expenditures divided by own revenue sources. Basically, it demonstrates the amount that own revenue sources (i.e.- local taxes) would need to increase if total operating expenditures increase. For example, a tax leverage factor of two shows that for every percent increase in total operating expenditures, own revenue sources would need to go up by two percent to keep up. A high tax leverage factor implies that taxes will have to be increased faster if expenditures increase for any reason. This factor examines local government finances for both governmental and total activities.

Environmental Indicators:

Total population: The trends in total population over time determine local governmental revenue and expenditure streams. A rapid drop in population will obviously coincide with a drop in revenues negatively impacting fiscal conditions. On the other hand, one might think that a rapid increase in population into an area would generate only positive benefits. However, if the migrants are lower income and utilize city services more than they pay in taxes than expenditures is outpacing revenues. To this extent, any rapid change in population can be considered a warning sign or a potential problem for a local government.

Population density: Population density, as measured in persons per square mile, remains a viable factor for cross-city comparison. The more densely populated an area, the easier it becomes for local authorities to provide governmental services to those persons. Whether it be physical infrastructure (waterlines) or human resources (police), those localities that have high population densities become more cost effective.

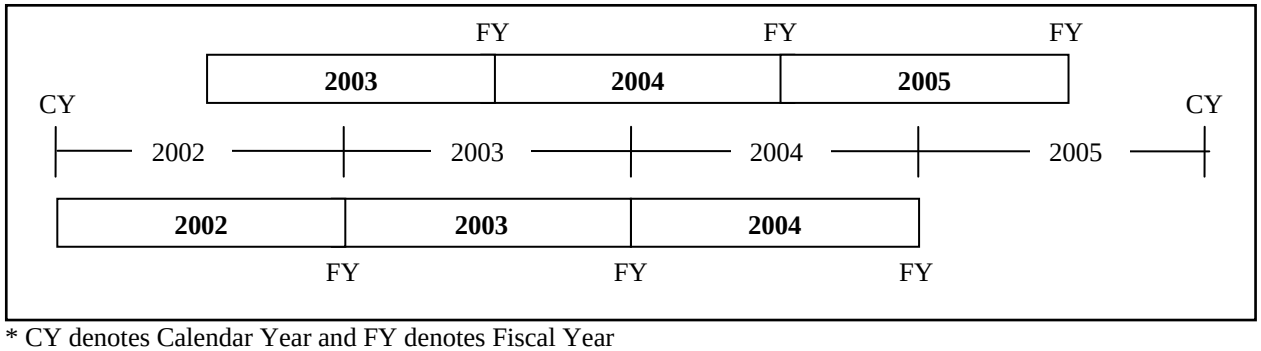
Unemployment Rates: Unemployment rates remain one of the most fundamental measures of financial success on a number of different levels. On one hand, low unemployment rates imply more people are making money leading to greater governmental revenues through various taxes. From another perspective, unemployment rates can be seen as a way to measure the ability of a local government to provide adequate labor to its business sector.

Comprehensive Annual Financial Report Data

All financial data from the light rail cities in this study (see Table 1) are derived from each city government's respective annual Comprehensive Annual Financial Report. The CAFR data range covers fiscal years 2002 through 2005.[11] The financial information relating to our financial indicators have been extracted from the 17 city CAFR sets to compile a comprehensive CAFR database. For example, the calculation of the current ratio entailed extracting the following variables from each CAFR by city by year: cash, receivables, inventories, accounts payable, deferred revenue, and noncurrent liabilities due within one year. This is but one financial indicator of the many that were found through this process. All financial indicators calculated through this analysis were originally pulled from this CAFR database.

On another note, discrepancies in fiscal years across governments had to be accounted for in this process. Certain local governments finish their fiscal year on June 30 while others coincide with the end of the calendar year on December 31. One agency (Dallas) even ends their fiscal year on September 30. Because of this overlap, those agencies ending their fiscal year in mid-year had to be matched up with those concluding at the end of the calendar year. Since we know that six months in both types fall in the same calendar year, we assume that a 2005 fiscal year for mid-term organizations remains compatible with a 2004 fiscal year for end of year organizations. To clarify this in graphical terms, a diagram of overlapping fiscal years can be found below.

Fiscal Year Calendars



* CY denotes Calendar Year and FY denotes Fiscal Year

[11] All Comprehensive Annual Financial Reports came from their respective city government (or county in some cases). Typically, this information was gathered through the finance, accounting, or comptroller office of the entity. A complete list of CAFRs may be obtained from the author upon request.

RESULTS

Light Rail Feasibility

The financial condition analysis evaluated the city of Louisville amongst current US cities with light rail cities. There were 19 financial indicators and 3 environmental indicators in the model. The final results of this analysis demonstrated that Louisville compares favorably to our focus cities in terms of a financial condition analysis. The median statistic was calculated for each measure and compared to Louisville's statistic in that category. The warning trend for that statistic based on the median could then be analyzed against Louisville's. In other words, if the warning trend for a particular measure was high and the median was five, a score of three for Louisville would results in a positive measure. Conversely, a score of seven for Louisville in this instance would give Louisville a negative rating. Each measure in each year was assigned a positive or negative rating based off this methodology.

The results of our analysis provided a total of 18 positives and 4 negatives for 2005, 17 positives and 5 negatives for 2004, and 17 positives and 5 negatives for 2003. Please see table 7 in Appendix C for the complete list of measures and results. Due to this nearly three to one positive ratio, we can conclude from the perspective of a financial condition analysis that Louisville could indeed justify the construction of a light rail system. Based off this revealing information, our focus group must be further refined down to determine which cities might provide optimal models for expenditure and revenue analysis. This information will be further elaborated on below.

Comparison Cities

From the financial condition analysis, the cities with those characteristics most similar to Louisville's can be ascertained. Again, it should be noted that comparison cities are chosen based on their financial traits and not on possible determinants of ridership (e.g.- population density or demographics). The financial condition analysis gets at the heart of whether a locality can financially support a project through existing finances. It is not predicated on how successful that project may or may not be in terms of self-sustainability (i.e.- ridership).

Out of the nineteen financial characteristics and three environmental characteristics, all of the cities are comparably ranked with respect to each measure in fiscal years 2003 through 2005.[12] First, all cities are sorted from ascending to descending for each measure to provide rankings (as shown in Table 1-6 in Appendix C). Subsequently, those cities within plus or minus two rankings of Louisville for each measure in each given year are considered comparable cities. In each instance, those cities with $\pm$ 2 comparable rankings are given a point. For all measures across all fiscal years, this procedure is performed. At the conclusion of this procedure, the points are summed and those cities with the most assigned points are deemed most comparable to the city of Louisville. For example in the 2004 ranking totals column shown below, Dallas had 13 separate measures (out of 19) in which it came within $\pm$ 2 of Louisville. It is these cities that form the basis for our specific study group. For a summary of results, please refer to table 2 below for our final rankings by year.

Table 2: **Summary Table of Comparison Cities**

2003 Ranking Totals		2004 Ranking Totals		2005 Ranking Totals	
Portland	9	Dallas	13	Dallas	10
Baltimore	7	Buffalo	9	Buffalo	7
Boston	7	Portland	8	Denver	7
Buffalo	7	Boston	6	Houston	7
Houston	7	Saint Louis	6	Portland	7
Minneapolis	6	Houston	5	Salt Lake City	6
Cleveland	5	Philadelphia	5	Boston	5
Salt Lake City	5	Sacramento	4	Cleveland	5
Denver	4	Salt Lake City	4	San Francisco	5
Saint Louis	4	Baltimore	3	Baltimore	4
Sacramento	3	Cleveland	3	Minneapolis	4
San Francisco	3	San Jose	3	San Jose	3
San Jose	3	Denver	2	Sacramento	2
Los Angeles	2	Minneapolis	2	San Diego	2
Philadelphia	2	San Diego	2	Los Angeles	1
Dallas	1	San Francisco	2	Philadelphia	1

It is important to note that the US Census information utilized to gather information for the environmental indicators remains current only through the 2004 calendar year.[13] Because of this

[12] Tables 1 through 3 in Appendix C detail the values obtained for all measures across the focus group.
[13] 2004 American Community Survey. Census population, population density and unemployment rates. US Census Bureau. <www.census.gov>.

discrepancy, the environmental indicators are staggered to match up with the financial indicators. In other words, the environmental indicators for the years 2002, 2003, and 2004 match up with the financial indicators for years 2003, 2004, and 2005, respectively.

From this table, the study cities are further narrowed by choosing the five highest ranked cities for each year. For the year 2003, those cities include Portland, Baltimore, Boston, Buffalo, and Houston. In 2004, the cities chosen were Dallas, Buffalo, Portland, Boston, and St. Louis. In the final year 2005, the ranked cities consist of Dallas, Buffalo, Denver, Houston, and Portland. All of these cities were chosen as our comparison with the exception of the city of Baltimore. This is because the light rail transit system in Baltimore operates through the Maryland Transit Administration, a state entity. Since the Transit Authority of River City remains independent of the state, the structural organization of Baltimore's transit agency was deemed incompatible with that of TARC.

Transit Authorities

The transit authorities, from the focus cities listed above, are all considered independent and autonomous service organizations. All five fall into one of the three following categories: special authority, special district, or independent agency. As defined by Capital Financing and Budget, special authorities and/or special district exist to provide a specific service to the public.[14] In this case, that service entails mass transportation for the public. Furthermore, each authority was initially created as a subcomponent of the state government.[15]

Each institution has an independent board of directors in charge of governance of the organization. The directors, by and large, principally obtain appointments from other government institutional authorities (governors, mayors, etc.). Some of the similarities shared by most of these authorities include the following capabilities: levy taxes on jurisdiction, issuance of debt for capital projects, and charge user fees (ie-fares) for service. Please refer to Appendix D

[14] Vogt, John A. Capital Budgeting and Finance: A Guide for Local Governments. International City/County Management Association. July 2004.
[15] Bi-State Development Agency was actually established jointly by the states of Missouri and Illinois to serve the city of St. Louis

for a complete listing of transit organizations and their corresponding agency and institution type descriptions as defined by the Federal Transit Administration.[16]

Each transit authority acts as an autonomous agency operating within the boundaries of its respective jurisdiction. Oftentimes, the majority of transit service provided lies within the confines of the principle/host city served such as Buffalo or Dallas. But as discussed in the Design Structure, many of these entities have "sprawled" out over the years providing service to sister cities and nearby adjacent counties. In our analysis of transit authority finances, all operating and capital expenditures are examined as ratios and percentages (per mile or per boarding passenger).

Transit Expenditures

Evaluation of the cost expenditures for the transit authority case studies can be used as a basis for projecting TARC's potential light rail expenditures. Extracting financial information from the 2004 Federal Transit Administration's database (NTD), the following factors are found by agency: annual operating expenses, fare revenues, directional route miles, annual unlinked trips, and sources of operating and capital funds.[17] These factors are calculated and compared across the focus cities to make realistic assumptions and comparisons to the Louisville case.

The first important measure consists of own sources revenues which in the case of transit entails fare revenues. The total operating expenses divided by total fare revenues gives us the user charge coverage or the recovery ratio for a system. This remains an important measure to determine how self-sustainable a transit system is and how much external financing it will require.

In the second and third measures, operating expenses across the different transit authorities must be comparable across the board. To compare across a standard unit, operating expenses are broken down into two ratios including operating expenses per directional route mile and

[16] Agency_info.xls. Complete 2004 Database. Federal Transit Administration. US Dept. of Trans. March 2006. <http://www.ntdprogram.com/NTD/ntdhome.nsf/Docs/NTDData?OpenDocument>.
[17] NTD Profiles. 2004 National Transit Database. Federal Transit Administration. US Dept. of Trans. January 2006. <http://www.ntdprogram.com/NTD/Profiles.nsf/ProfileInformation?OpenForm&2004&Top30>.

operating expenses per annual unlinked trip. Directional route miles are those one-way miles of light rail track in each direction. Annual unlinked trips equate to annual passenger boardings and remain the most viable way of measuring total passenger traffic flow.

The fourth and fifth measures encapsulate the percentages of funds transit systems are receiving by government source and by types of expense. In other words, funding streams are broken down into those from the state treasury and those from local funds. Also, expenses as related to operating versus capital expenditures are subdivided out into percentages.

Due to the limited dataset of comparison (7 case studies), calculating an average in this dataset for a basis of comparison would not make sense. The Boston transit operating expenses and fare revenues greatly exceed the values of the other corresponding authority's values. If an average was taken, Boston would exaggerate the true cost and/or fare that could be expected. Because of this, the median or middle number is taken in each of our indicators. This more truly represents our middle-of-the-road basis for comparison. Each of the indicators described above have their median calculated for this reason.

Upon obtaining our comparison median values, the projected operating costs of the TARC transit system is based solely in 2020 dollars. Because all of our dollar values are 2004 dollars, Louisville's operating costs must be converted into 2004 constant dollars. This is done through use of discounting which brings future values into present day values. As stated in Cost-Benefit Analysis[18], the following equation must be used for our conversion:

$$PV = Y / (1 + i)^n$$

In this equation, PV stands for present value of the amount (Y) based on compounded annual interest rate (i) received in (n) years. It is not enough to simply assume an interest rate some 15 years + into the future. Many factors affect the economic condition and as the economy grows/shrinks, interest rates will react accordingly. To this extent, a sensitivity analysis is

[18] Boardman, Anthony; Greenberg, David; Vining, Aidan; and Weimer, David. Cost-Benefit Analysis: Concepts and Practice. 2nd ed. Prentice Hall. October 2000.

recommended in this scenario to show how cost projections may differ depending on the economic conditions at the time. For our case, we will use the three interest rates of 4, 7, and 10 percent. These numbers are obtained from the US Office of Management and Budget or OMB recommendation to use a real rate of 7 percent. Other organizations utilize different rates including the Federal Treasury in Canada's preferred discount rate of 10 percent or some municipalities using a real discount rate of 3 percent. Due to these extremes, the number 7 was chosen as the original estimate with a positive/negative deviation of 3 percent. At this point, we have three potential operating expenditure values for Louisville's projections based in 2004. Please refer to the table 3 shown on the following page.

Table 3

TARC Operating Costs- Sensitivity Analysis	
Annual Operating Cost (2020) = $28.0 Million	
Compounded Annual Interest Rate	Constant Dollars 2004
4.0%	$14,949,429
7.0%	$9,484,569
10.0%	$6,093,616

These operating expenditures are then compared to our median 2004 values to form a basis of comparison. So the known values on table 4 on the following page include: operating expenses, directional route miles, and annual unlinked trips assuming Louisville's ridership projections hold true. From our calculated median values, we can use them to project standards in our equation calculations. Using a user charge coverage median of 24.1 percent, the projected fare revenues needed by the Louisville light rail system are obtained. Using the known track mileage and Louisville's ridership numbers, operating expenses per directional route mile and operating expenses per annual unlinked trip are both calculated. Finally sources of operating funds, broken down by percentage into state versus local funds, extrapolate projected annual operating expenses for Louisville by government source. Please refer to Table 4 on the following page for a cost estimates broken down by median transit authority and Louisville sensitivity rates. A full transit expenditure dataset with corresponding calculations for our focus cities can be found in Appendix E.

From the initial estimates provided by TARC, it appears they have underestimated what they can expect to pay in annual operating costs. TARC's original estimate for annual operating expenses in the year 2020 was $28.0 million. Because this occurs in the future, a sensitivity analysis was performed to derive the 2004 discounted dollar values of $14,949,429; $9,484,569; and $6,093,616 for the rates of 4, 7, and 10 percent, respectively (Table 3). These figures can be further broken down into operating expense per directional mile. Fifteen miles of TARC light rail translates into thirty miles of directional track. Focusing on expenses per directional mile, the Louisville sensitivity analysis values come out to $498,314, $316,152, or $203,121, respectively. On the other hand, the median operating expense per directional mile from the comparison cities was found to be $711,641 (see Table 4). Even in Louisville's best-case scenario with a compounded annual interest rate of only 4.0%, operating expenses are underestimated by over $200,000 per track mile. This low prediction should prove actual operating costs are most likely more expensive than their original estimates.

Table 4: Transit Expenditures

Louisville Transit Comparisons	Median Transit Statistic	Compounded Annual Interest Rate		
*All dollar amounts are in 2004 dollars		4.0%	7.0%	10.0%
Operating Expenses	$ 36,293,685	$ 14,949,429	$ 9,484,569	$ 6,093,616
Fare Revenues	$ 8,760,375	$ 3,608,413	$ 2,289,334	$ 1,470,844
User Charge Coverage (recovery ratio)	24.1%	24.1%	24.1%	24.1%
Directional Route Miles	51.0	30.0	30.0	30.0
*Annual Unlinked Trips (passenger boardings)**	14,509,522	5,821,750	5,821,750	5,821,750
Operating Expense / Directional Route Miles	$ 711,641	$ 498,314	$ 316,152	$ 203,121
Operating Expense / Annual Unlinked Trips	$ 2.50	$ 2.57	$ 1.63	$ 1.05
*Sources of Operating Funds				
Local fund percentage	57%	57%	57%	57%
State funds percentage	1%	1%	1%	1%
Operating expenses from local funds	$ 20,687,400	$ 8,521,174	$ 5,406,204	$ 3,473,361
Operating expenses from state funds	$ 362,937	$ 149,494	$ 94,846	$ 60,936

*Assume 15,950 Average Weekday Boardings for TARC projection holds true (365*15,950= annual ridership)

~Cost projections include: fare revenues, operating expenses from local funds, and operating expenses from state funds

~User charge coverage, local funds percentage, and state funds percentage assume "Median Transit Statistic" measures to hold true for Louisville

Although reasonable operating expenditures estimates have been found, the capital costs remain. For a project of this magnitude, the costs associated with the capital infrastructure can be quite enormous. Utilizing TARC's capital cost estimates, the total capital cost projected as of 2001 summed to $671.2 million. If federal assistance was provided by FTA's New Starts program, this number dropped down to a more reasonable $291.0 million provided by local financing. Converting these 2001 dollars into 2004 dollars as before, we obtain the inflated dollar values of $715.6 million and $310.3 million for total and local costs, respectively. These numbers are further broken down into what TARC might expect to pay if they incur the full total capital costs of the project. This option uses the median percentage of capital costs from other transit authorities in our study. The second option assumes that the New Starts federal assistance funding source comes online. Please refer to table 5 below for a detailed listing of expenditures.

Table 5

*Total Capital Costs**	Median Percentage	2001 Dollars*	2004 Dollars
-- Sources of Capital Funds		$ 671,200,000	$ 715,600,000
Local funds percentage	64%	$ 429,568,000	$ 457,984,000
State funds percentage	1%	$ 6,712,000	$ 7,156,000
*Local Capital Costs***		$ 291,000,000	$ 310,250,000

~Note that "Median Transit Statistic" capital expenses denotes additions to existing systems and not construction of a new system

** initial cost estimates provided per TARC estimates*

*** this option assumes federal grant money received from the New Starts program for transit assistance per the FTA*

Capital Financing Options:

Since the capital costs are so large in mass transit, the pay-as-you-go financing option will not work in this case. Pay-as-you-go financing entails creating taxes or revenue streams to pay off the debt in this scenario. This major project would most likely exhaust all capital revenues and surpluses for years to come if it were even possible at all. Furthermore, pay-as-you-go is not appropriate for projects that will have a very long lifespan. This is because the major costs of such a project are borne by present-day taxpayers who might not receive the bulk of the benefits. Those future generations would stand to reap the full benefits from such a project without having to pay their fair share. It is for this reason that debt financing would be more appropriate for a project of this magnitude.

Debt financing consists of a promise by the debtor to pay a future obligation with interest. For municipal governments, this typically includes general obligation bonds, revenue bonds, or some type of special obligation bond. General obligation bonds, or GO bonds, are those bonds issued by the municipality secured with "the full faith and credit or unlimited taxing power of the issuing local government". Revenue bonds consist of debt secured with the revenues generated from that specific service. In this case, the revenue bonds would be backed with fares obtained from the transit service. Finally, special obligation bonds are bonds backed by special taxes or revenues but not unlimited in nature (like GO bonds).

Transit authorities, as one of their powers, have the right to issue debt. From our financial condition analysis shown previously, we see that the city of Louisville has relatively low debt burden, debt service burden, and tax revenues per capita. As such, we can deduce that the residents of Louisville do not overpay their share of taxes or debts for the locality. As such, TARC might have greater flexibility to issue debt in the future than similar authorities in debt-strapped cities. From this supposition, we can conclude that a bond might be issued to finance such a project.

Tables 1 and 2 in Appendix F demonstrate a potential capital funding option for TARC through the use of bonds. Both tables assume a 4.54% municipal yield taken from Bloomberg's national municipal bond yields as of March 29, 2006.[19] In addition, both bond options are considered to be triple-A rated, tax exempt insured revenue bonds. This is a likely assumption for capital projects that typically receive revenues through fares incurred during their life. In table 1, the annual principal, annual interest, and annual debt service stems from TARC bearing the full-scale total costs of the project outlined previously. In table 2, those factors are assuming TARC receives the New Start grant money prior to issuance of debt. Although these debt finance scenarios represent possible funding options for this light rail system, there remain many different debt finance instruments in circulation. More investigation into the most appropriate debt financing option available to TARC is therefore recommended.

[19] Municipal bond yields. Bloomberg's market rates. March 29, 2006. <http:www.bloomberg.com/markets/rates/index.html>.

Transit Revenues

Transit operating and capital related expenditures are obviously dependent on revenue sources to finance their transit needs. Many avenues can be pursued to acquire adequate revenues for this end. However, as one might anticipate, there are no easy or inexpensive strategies to garner ample revenues. Many different sources of revenue are called for since fares do not adequately cover operating or capital expenses as outlined earlier. Of the many revenue options, there are a few that prevail among the focus cities in this study including passenger revenues (fares), sales tax, municipal payroll tax, local assessment tax (property), federal grants, state grants, investment income, advertising revenue, and other income.

Dedicated taxes are often called for to finance such ventures. Dedicated taxes can be defined as a directly levied tax from the transit authority for the sole purpose of financing transit.[20] Often, dedicated taxes are critical for maintaining an adequate and dependable revenue stream. Perhaps this explains why five of our seven authorities depend on this revenue source as their chief source of funding. In each of these cases, it is important to note that the dedicated tax supports the overall transit authority and is not dedicated solely to the light rail system. Other typical components of transit authorities might include bus systems or demand-response transport systems.

A sales tax remains the most popular dedicated tax for transit revenues. Four of the seven transit authorities utilize this mechanism including Boston, Dallas, Denver, and Houston. Sales taxes are collected through either the state or local tax authorities and then reallocated back to the transit authority. Sales taxes are only obtained through the jurisdiction served by the individual authority. The most common sales tax percentage seems to be 1 percent with three of the cities incorporating this charge and the other utilizing 0.75 percent.[21]

Though not as frequently employed as sales taxes, both municipal payroll taxes and local assessment taxes can be utilized as a dedicated tax source. The Massachusetts Bay

[20] 2004 Reporting Manual. Financial Module. Federal Transit Administration. US Dept. of Trans. March 2004. <http://www.ntdprogram.com/NTD/ReportingManual/2004/Annual/PDFFiles/2004%20Financial%20Module.pdf>.
[21] All Comprehensive Annual Financial Reports in this instance came from the local transit authority or entity. A complete list of CAFRs is available from the author upon request.

Transportation Authority in Boston uses local assessments to obtain transit revenues along with their sales tax (MBTA). TriMet located in the Portland metropolitan area employs a municipal payroll tax to people in their jurisdiction (TriMet).

Grants dollars through state or federal agencies remains the next most valuable source of revenue to dedicated taxes. Three of the seven authorities in the study use this form of revenue including St. Louis, Dallas, and Denver. This revenue source becomes especially critical during the start-up of a transit system due to the overwhelming initial capital costs. Almost every city with a transit relied upon federal dollars in their preliminary transit construction period.

Finally, transit authorities often obtain revenues from miscellaneous sources not described above. While many options might be viable, the three most common in our case studies includes investment income, advertising revenue, and the dubious other income category. Investment income simply means that income which is derived through interest. This might include authorities using existing bond funds or capital reserves to invest. Advertising revenues can be an obvious source of revenue by opening up sponsor dollars to put their ads on the sides of trains or in transit stations. Other income is generally a non-transparent category that agencies use. In some cases, other income might entail federal or state appropriations or some other form of own source revenue but without financial notes accompanying the statement of activities, there is no way to be for sure.

Please refer to tables 6 and 7 on the following pages for a complete listing of revenue source numbers for each transit authority in our focus group. Each transit authority's revenue source by percentages are shown in pie-charts in Appendix G. In each case, revenue sources were not able to be broken down by transportation component (i.e.—light rail) in the overall transportation authority as before in our expenditure analysis. Most of our authorities had bus systems to go along with their light rail and some had heavy rail, airports, etc. To this extent, the assumption will have to be made that light rail fund sources by percentage do not differ dramatically from the overall transit authority fund sources by percentage.

Table 6

Transit Revenues				
2004 Transit Authorities' Financial Statements	Boston Massachusetts Bay Transportation Authority	Buffalo Niagara Falls Transportation Authority	Dallas Dallas Area Rapid Transit	Denver Regional Transportation District
Passenger Revenue	$ 344,936,000	$ 64,329,000	$ 35,818,000	$ 61,023,000
Sales Tax	$ 684,280,000	$ -	$ 333,309,000	$ 221,276,000
Municipal Payroll Tax	$ -	$ -	$ -	$ -
Local Assessments	$ 139,437,000	$ -	$ -	$ -
Federal Grants	$ -	$ -	$ 55,278,000	$ 39,649,000
State Grants	$ -	$ -	$ 459,000	$ -
Investment Income	$ 7,208,000	$ -	$ 29,955,000	$ 9,439,000
Advertising	$ -	$ -	$ 9,069,000	$ -
Other Income	$ 11,917,000	$ 64,992,000	$ 13,166,000	$ 3,621,000

~Operating revenues analysis for overall Transit Authorities (not broken down by Light-Rail component)

~Capital revenues, grants, and contributions not included in this chart

*Passenger Revenue typically denotes fare revenue and other revenues derived from transportation

Table 7

Transit Revenues				
2004 Transit Authorities' Financial Statements	Houston Metropolitan Transit Authority of Harris County	Portland Tri-County Metropolitan Transportation District	Saint Louis Bi-State Development Agency	Median Transit Statistic
Passenger Revenue	$ 45,620,718	$ 55,664,000	$ 35,204,250	$ 55,664,000
Sales Tax	$ 381,932,680	$ -	$ -	$ 357,620,840
Municipal Payroll Tax	$ -	$ 146,125,000	$ -	$ 146,125,000
Local Assessments	$ -	$ -	$ -	$ 139,437,000
Federal Grants	$ -	$ -	$ 15,176,385	$ 39,649,000
State Grants	$ -	$ -	$ 115,497,276	$ 57,978,138
Investment Income	$ 1,568,753	$ 1,622,000	$ 26,477,096	$ 8,323,500
Advertising	$ -	$ -	$ -	$ 9,069,000
Other Income	$ 410,998	$ 30,667,000	$ -	$ 12,541,500

~Revenue analysis for overall Transit Authorities (not broken down by Light-Rail component)

~Capital revenues, grants, and contributions not included in this chart

* Passenger Revenue typically denotes fare revenue and other revenues derived from transportation

RECOMMENDATIONS

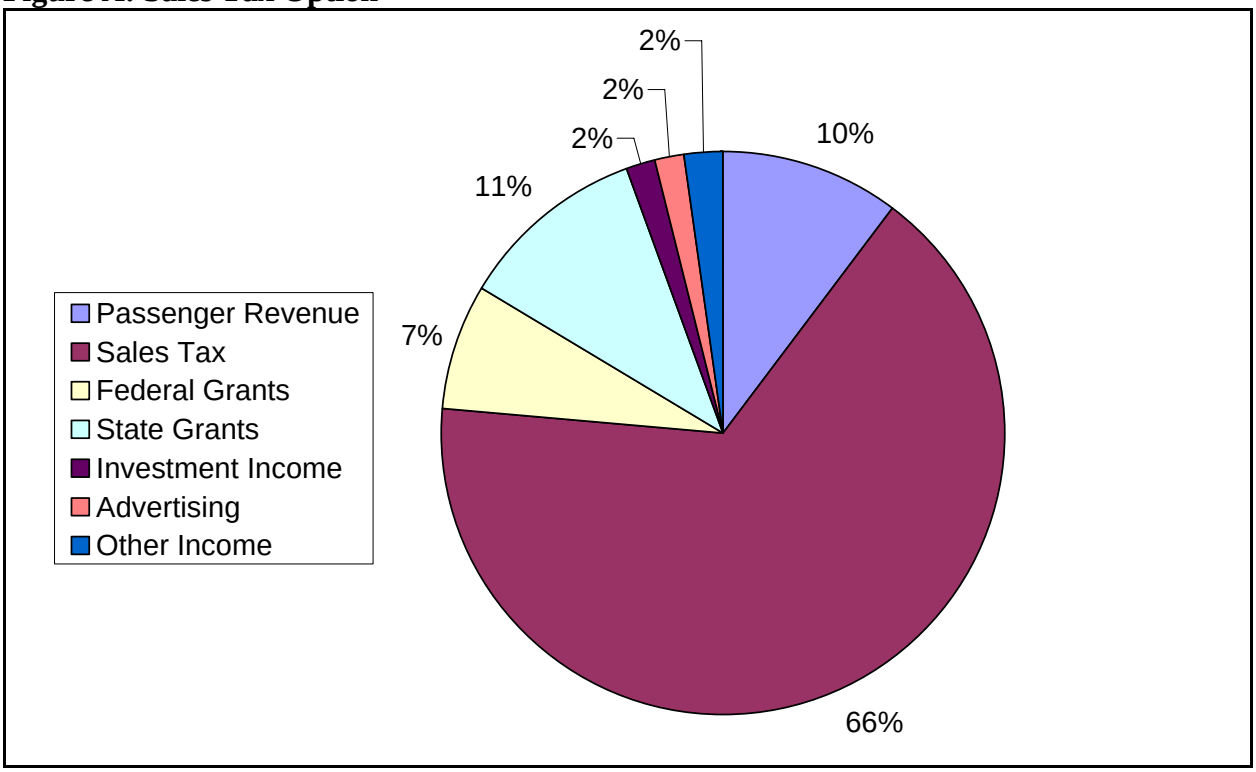
Finance Options

From our transit authority revenue sources, several potential revenue options present themselves as possible models for TARC. In all likelihood, some sort of dedicated tax will be needed to finance such a system as outlined earlier. With various tax options, TARC might incorporate the use of a sales tax, a municipal payroll tax (occupational), or a local assessments (property) tax. Furthermore, a culmination of these three potential revenue sources could result in a hybrid model for utilization. Please see Appendix H for the complete table of tax option models.

Each revenue finance option derives its corresponding percentages from the median statistics found in Revenue Tables 1 and 2 on the preceding pages. For example, the sales tax percentage in the "sales tax option" would be found by dividing total revenues ($540,845,978) by sales tax revenues ($357,620,840) to come up with 66 percent. From the respective medians, one could anticipate a possible 66 percent, 43 percent, or 43 percent from the sales tax, municipal payroll tax, or local assessments tax options. The Hybrid option diversifies revenue streams through the use of several taxes resulting in percentages by source of 42 percent, 18 percent, and 17 percent for sales tax, municipal payroll tax, and local assessments tax revenues, respectively. But it is important to note that although this option minimizes financial risk through diversification, politically this would be the least feasible option due to the difficulties in having to raise three separate taxes.

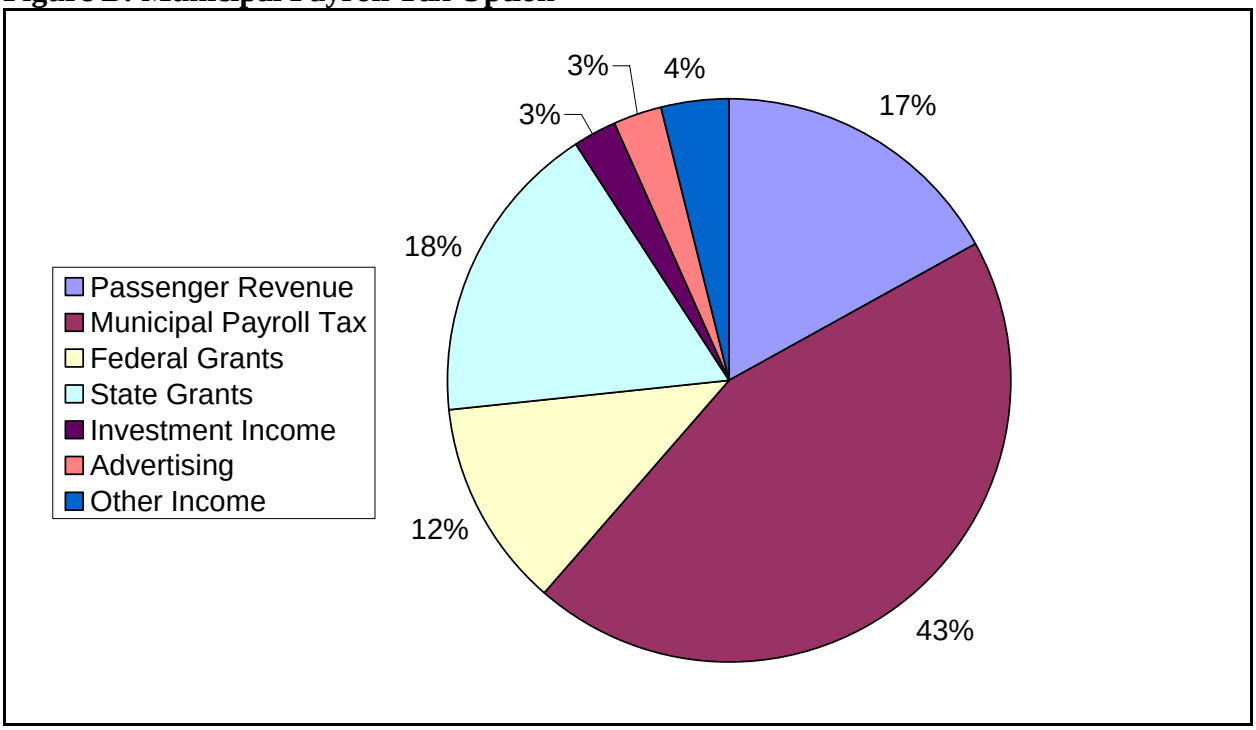
The popularity of a sales tax could justify the utilization of this option as a dedicated tax revenue source for a transit system. Due to the low tax revenues per capita of the Louisville populace, it would seem that more revenues could be raised for this project. Another option would be the municipal payroll tax option. TARC currently receives the bulk of its mass transit subsidies from the administration of an occupational tax through Louisville Metro Government. A slight increase in this might provide the additional revenues needed. More studies should be performed in this area to determine the most appropriate revenue finance option for TARC. The various finance option models are found in figures A through D on the follow pages.

Figure A: Sales Tax Option



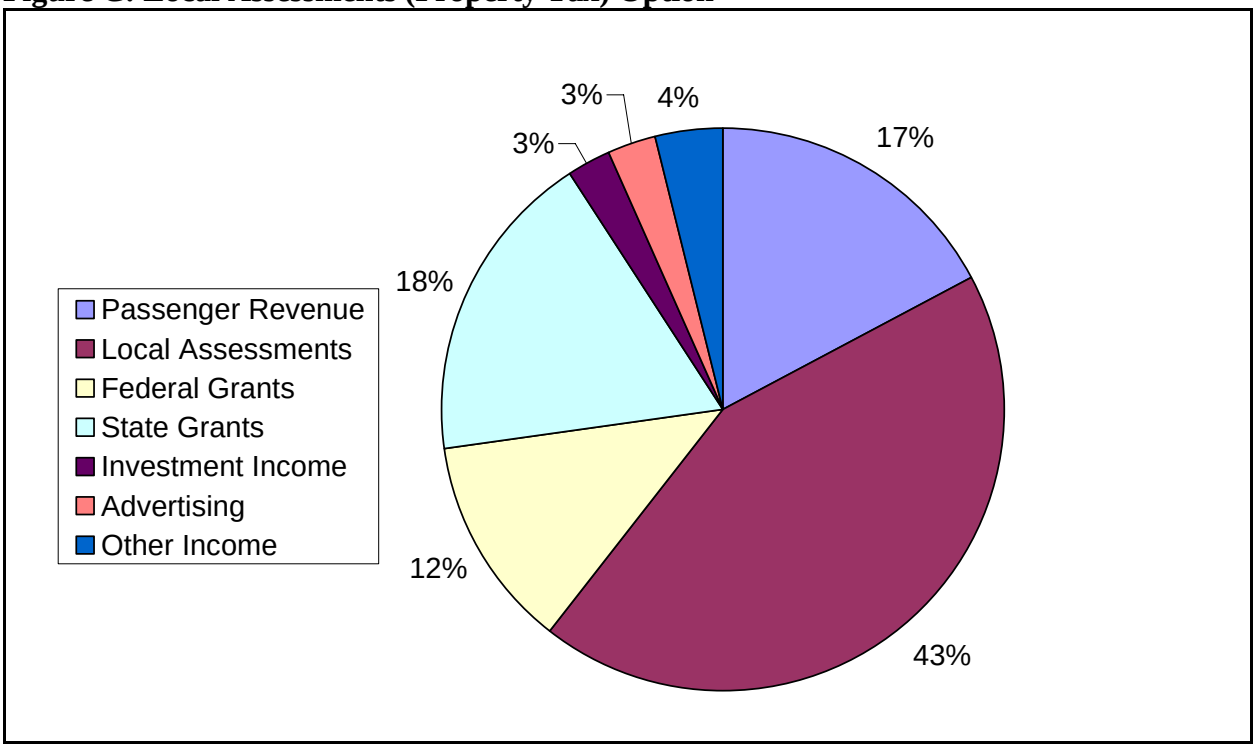
Source: Appendix H, Table 1

Figure B: Municipal Payroll Tax Option



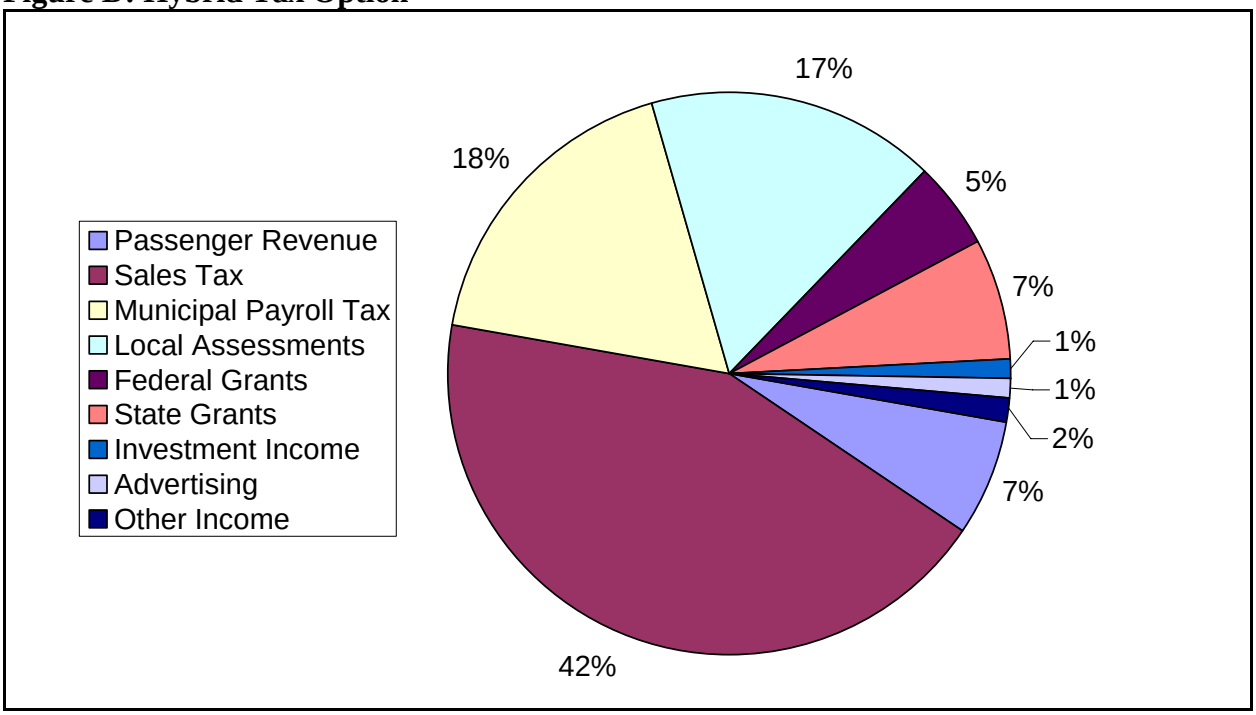
Source: Appendix H, Table 1

Figure C: Local Assessments (Property Tax) Option



Source: Appendix H, Table 1

Figure D: Hybrid Tax Option



Source: Appendix H, Table 1

LIMITATIONS TO METHODOLOGY

As stated previously in the design structure, the capstone methodology is limited by the fact that financial details are not readily available across all municipal governments residing within the boundaries of a transportation authority. To overcome this obstacle, the main metropolitan city financial statements were used to provide an initial basis of comparison for Louisville.

The second limitation to this methodology focuses on the lack of ridership projections in this study. Ridership determinants including factors such as population, population density, minorities, and car ownership rates can all positively contribute to the number of passengers utilizing a transit system. These measures help to determine how self-sustainable a system might become through user fees (i.e.- fares) generated. Regression analysis typically provides the model through which ridership figures are projected. Unfortunately, the low number of light rail systems currently in existence for this study limits the usefulness of this model for this particular case. The number of cities with existing light rail systems remains below the central limit theorem threshold of thirty. This minimum standard needs to be met before one can assume normal distribution and assign real weight to a regression analysis model.

Finally, the last limitation of this model is that it does not provide an evaluation on the benefits side of the equation. Benefits incurred from a light rail system could include direct user benefits to those people using the system. Direct benefits can include reduced travel times, reduced vehicle operating costs, and lower emissions rates. These direct benefits might then produce a multiplier effect of indirect benefits. For example, the addition of a light rail system could reduce nearby interstate congestion resulting in lower travel times on that corridor. Businesses might find the region more attractive if the freight lanes have been opened up allowing for quicker shipment of their goods. If more businesses decide to move into the Louisville metropolitan area, this would result in an indirect economic benefit to the region. Because of the complex nature of projecting future benefits, this aspect of project evaluation could not be incorporated into this capstone study.

CONCLUSION

Louisville's interest in a light rail system certainly seems justified. Through the use of a financial condition analysis, various cities across the US with existing light rail systems were evaluated for their financial and environmental compatibility to Louisville. Many factors were utilized including measures of revenues, expenditures, debt capacity, and operational measures. In addition, demographic information such as population, population density, and unemployment rates were included as our environmental measures. From these 22 total measures, Louisville compared favorably with other light rail cities in the US based on their financial characteristics.

Upon this favorable realization, a detailed expenditure and revenue analysis is performed on the various transit authorities in each locality. The original list of seventeen comparison cities was further reduced for comparison purposes down to seven. At this point, a full-scale expenditure analysis was performed by examining both operating and capital expenses for the light-rail components of the various transit authorities. Based off these results, reasonable operating and capital expense were predicted for the Transit Authority of River City.

Finally, revenue sources came into focus as potential funding options were sought for Louisville. By examining the various fund sources for focus authorities, several models were generated that TARC might pursue to finance a light rail system. Those options included a sales tax, municipal payroll tax, local assessments tax, and a hybrid tax option. In all cases, it was deemed critical to have a dedicated revenue source. This was the case due to dedicated taxes representing the largest allocation of revenues by source in each of our focus authorities.

The prospect of light rail coming to Louisville would serve many transit needs. But the magnitude of such a project is not without costs. This study served to determine how the city of Louisville and its transportation component TARC measured up in relation to other light rail systems in the US. Many revenue and expenditures scenarios were examined for potential use in Louisville. From the analysis, it can be stated that Louisville could justify the construction of a transit system in the future.

Appendix A

GASB & Financial Statement Overview

In order for the CAFR to have meaning, it remains essential that these reports have a minimum degree of uniformity as well as a set of underlying standards. This is where the Governmental Accounting Standards Board, better known as GASB, comes into play. This private-sector, non-profit, and independent organization sets the guidelines and rules for accounting in the government sector.[3] The rules of accounting for governmental organizations are referred to as Generally Accepted Accounting Principles (GAAP). GAAP rules apply to both state and local governments.

GASB maintains its independence to ensure that external pressures (including political) do not influence the rules of accounting. Seven board members, accounting experts in the academic community, serve in part-time GASB roles along with their supporting staff. GASB is not a governmental agency and as such, does not produce enforceable laws or regulations. Legitimacy and credibility is maintained through unofficial means. This includes credit rating agencies using these standards for bond ratings, audit opinions, and some state laws mandating use by local governments.

In the context of local government, GASB Statement No. 34 establishes the requirements for financial reporting. This relatively new standard (June 1999) sought to increase disclosure and transparency of local government finances. The measure first became official in phase 1 (after June 15, 2001) for those local governments with total annual revenues exceeding $100 million.[22] Phase 1 implementation applied to all the cities in this study to be discussed later.

Basic financial statements on government organizations derived important changes brought upon by GASB Statement No. 34. Prior to statement 34, financial statements in local government accounting were often confusing, non-uniform, and broken down in various fund accounts. This resulted in indiscernible information to the outsider seeking knowledge on the city's finances

[22] Strayhorn, Carole Keeton, Texas Comptroller. GASB 34 Manual for Texas: Cities and Counties. Texas Comptroller's Office. June 2003.

(legislators, city managers, analysts, etc.). Statement No. 34 sought to alleviate this concern through a clearer and quicker snapshot of government finances.

The two governmental-wide financial statements in a CAFR are the statement of net assets and the statement of activities. Both statements display broad information on the government as a whole rather than a fund accounting approach. Unlike the old cash basis of accounting, basic financial statements under GASB statement no. 34 use a full-accrual basis of accounting. This simply means revenues are recorded when earned and liabilities are listed when incurred.[22] The formerly used cash basis of accounting measured revenues once in-hand and liabilities when the money was actually spent.

The main focus of both statements involves financial visibility of the primary government. The primary government includes all organizations within the local government for which the municipality is chiefly responsible.[1] This can be further broken down into two subcomponents: government activities versus business activities.

Government activities are those functions of the government that provide the cornerstone of its foundation. In other words, they are central to the mission of government and can include such matters as education, social services, and law enforcement. Since these activities are rarely self-supporting, dedicated taxes and local revenue streams from other sources usually finance their daily operations. Typical governmental funds utilized in this fund accounting include the general fund, capital project funds, debt service funds, and special revenue funds.[22]

Business activities, as the name implies, represent a business-like approach to governmental operations. These activities typically provide a tangible service to the public. Unlike governmental activities, business activities by and large are self-supporting by charging user fees to those who utilize their services.[1] User fees might include bills for water/wastewater, tolls for highway use, or a fee to park your vehicle. Funds for this activity fall under the general proprietary fund category and can include either enterprise funds or internal service funds. As one might surmise, these ventures often produce more revenues than governmental activities and can be utilized to cover governmental activities' budgetary shortfalls.

The statement of net assets parallels the traditional balance sheet in showing a quick snapshot of a government's finances at a particular moment in time. This statement utilizes the fundamental equation of accounting as follows:

Assets – Liabilities = Net Assets

The assets entail what the government owns while liabilities looks at what the government owes to another party. Net assets are the difference between the two and result in a residual fund balance for future years. A typical statement of net assets breaks down across governmental activities, business activities, total activities (g.a. + b.a.), and component units.[23] All assets are listed in the top-half of the page, liabilities in the middle, and net assets near the bottom. Each asset (cash, investments, etc.) is listed in order from most liquid (top) to least liquid.[22] Liquidity measures how easily an asset can be readily converted into cash. Likewise, all liabilities are listed in order of how quickly they can be fulfilled.

The statement of activities tracks revenues and expenditures for a government across the fiscal year. Expenses are listed in the first column to underline their importance in taxpayer burden.[22] All expenses are shown by primary government (governmental, business, total) and component status. Revenues are broken down by functional classification (service charges vs. grants) and activity status (gov't, business, total, & components). This sheet principally assists with tracking revenue inflows and outflows in local government a fiscal year. While the statement of net assets shows finances at a frozen moment in time, the statement of activities demonstrates how you got there. Please see Appendix A for a detailed example of a statement of net assets and a statement of activities.

Finally, every CAFR relies extensively on financial notes relating to the basic financial statements. These notes are an integral part of the statements and provide a finer level of detail.

[23] Component units are those governmental bodies outside of the primary government. They are legally separated from the local government but still serve the public by their nature (see Finkler- footnote 1). They are included in the statement of net assets due to their close financial relationship with the local government. For example, the local government may partially support the finances of the component unit as well as serve as a debt-sponsor in case of default.

In other words, financial notes show the numbers behind the numbers. Often, financial notes provide further explanation on what is going on with a certain financial indicator. Frequently, debt analysis involves examining the financial notes to truly understand what is going on with the city's debt capacity.

LOUISVILLE/JEFFERSON COUNTY METRO GOVERNMENT
STATEMENT OF NET ASSETS
June 30, 2005

	Primary Government	
	Governmental Activities	Component Units
ASSETS		
Cash and cash equivalents	$ 114,900,564	$ 41,142,620
Investments	115,441,873	12,264,426
Receivables, net of allowance for uncollectible amounts	61,039,370	67,642,536
Deposits with paying agents	70,000	
Due from primary government		120,000
Inventories	476,785	17,434,325
Prepaid items and deferred charges	2,655,887	4,810,361
Assets restricted by bond indentures and other legal provisions	36,974,112	144,135,448
Non-utility property		106,576
Land and improvements	286,483,966	27,282,142
Construction in progress	25,978,184	364,830,317
Works of art	255,000	
Infrastructure	872,041,764	2,591,755,073
Other capital assets	599,137,822	374,806,726
Less accumulated depreciation	(948,361,284)	(835,978,550)
Capital assets, net	835,535,452	2,522,695,708
Total assets	1,167,094,043	2,810,352,000
LIABILITIES		
Accounts payable and accrued payroll	39,579,132	38,702,736
Due to component units	120,000	
Due to other government agencies	15,457,125	9,538,566
Unearned revenue	29,669,301	16,127,566
Other liabilities	11,070,065	10,969,600
Long-term liabilities:		
Due within one year	25,480,000	27,628,537
Due in more than one year	408,719,675	1,408,438,350
Total liabilities	530,095,298	1,511,405,355
NET ASSETS		
Invested in capital assets, net of related debt	401,335,777	1,140,769,460
Restricted for:		
Capital projects	74,553,001	30,988,336
Debt service		29,053,374
Unrestricted	161,109,967	98,135,475
Total net assets	$ 636,998,745	$ 1,298,946,645

The accompanying notes are an integral part of the financial statements.

LOUISVILLE/JEFFERSON COUNTY METRO GOVERNMENT
STATEMENT OF ACTIVITIES
For the Year Ended June 30, 2005

Functions/Programs	Expenses	Program Revenues: Charges for Services	Program Revenues: Operating Grants and Contributions	Program Revenues: Capital Grants and Contributions	Net (Expense) Revenue
Primary government:					
Governmental activities:					
General Government:					
Metro Council	$ 5,543,856	$ 354			$ (5,543,502)
Mayor's Office	2,930,052	20,664			(2,909,388)
County Attorney	7,827,940	361,796	$ 996,536		(6,469,608)
Other Elected Officials	7,693,687	386,182	223,043		(7,084,462)
Internal Audit	610,967				(610,967)
Finance Department	8,822,348	371,008	155,826		(8,295,514)
External Agencies	5,033,634	4,571,204			(462,430)
Purchasing Department	615,312	221,073			(394,239)
Policy and Strategic Planning	576,145		6,885		(569,260)
Information Technology	9,205,957	512,193	200	$ 616,100	(8,077,464)
Human Resources Department	4,299,291				(4,299,291)
Human Relations Commission	1,041,880	24,815	215,478		(801,587)
Police Department	138,751,554	1,056,986	7,597,600	2,039,877	(128,057,091)
Public Protection Cabinet	156,848				(156,848)
Fire Department	59,456,924	275,380	2,416,615	208,553	(56,556,376)
County Emergency Medical Services	9,413,153	8,831,242	13,808		(568,103)
Emergency Management	2,327,559	3,352,538	275,895	1,719,159	3,020,033
Corrections Department	44,559,653	2,652,180	5,051,005	28,887	(36,827,581)
Youth Detention Services	7,261,589	71,120	2,194,566		(4,995,903)
Metro Criminal Justice Commission	733,737		300,652	922,722	489,637
Office of Public Safety	195,507				(195,507)
Firefighters' Pension Fund	2,089,711				(2,089,711)
Policemen's Retirement Fund	2,065,100				(2,065,100)
Public Works Department	87,501,828	1,116,037	10,178,078	4,280,074	(71,927,639)
Facilities Management	21,555,819	3,357,671	1,787,754	1,613,125	(14,797,269)
Solid Waste Management Services	20,315,923	1,429,821	390,325		(18,495,777)
Inspections, Permits and Licenses	8,185,714	12,409,334	1,779,529	587,055	6,590,204
Animal Control Services	1,935,045	784,527		45,527	(1,104,991)
Department of Neighborhoods	6,628,578	8,126	431,441		(6,189,011)
Parks Department	24,943,797	5,228,842	311,704	241,158	(19,162,093)
Louisville Free Public Library	20,227,180	245,583	780,031	425,015	(18,776,551)
Louisville Zoological Gardens	12,603,490	7,887,283	595,991	27,677	(4,092,539)
Metro Development Authority	13,944,093	8,219,029	351,255	2,543,764	(2,830,045)
Planning and Design Services	3,325,179	1,467,833	157,490	17,369	(1,682,487)
Housing Department	8,573,662	2,780,334	3,753,661	13,064,167	11,024,500
Community Development	3,676,576	1,245,025			(2,431,551)
Air Pollution Control	4,500,117	1,079,766	1,311,071		(2,109,280)
Waterfront Development Corp	4,666,756	212,810	523,866	752,607	(3,177,473)
Redevelopment Authority	639,608	583,893			(55,715)
Economic Development Corporation	921,412				(921,412)
Community Economic Development Corporation	1,444,923				(1,444,923)
Health Department	36,407,344	1,202,841	15,462,399	34,796	(19,707,308)
Human Services	17,488,340	12,911	4,343,637		(13,131,792)
Kentuckiana Works	8,989,864		8,220,552		(769,312)
Community Action Partnership	5,779,094	3,681	5,272,176		(503,237)
Interest expense	17,077,617	200,251			(16,877,366)
Total governmental activities	$ 652,544,363	$ 72,184,333	$ 75,099,069	$ 29,167,632	$ (476,093,329)
Component units:					
Louisville Water Co.	$ 89,345,679	$ 102,338,162		$ 16,430,901	$ 29,423,384
Parking Authority of River City, Inc.	12,671,756	11,905,573			(766,183)
Transit Authority of River City, Inc.	62,207,047	8,183,438	$ 56,987,456		2,963,847
Louisville and Jefferson County Riverport Authority	4,175,855	4,545,626			369,771
Metropolitan Sewer District	142,502,000	122,849,000		27,866,000	8,213,000
Louisville Science Center	5,906,819	5,993,089			86,270
Total component units	$ 316,809,156	$ 255,814,888	$ 56,987,456	$ 44,296,901	$ 40,290,089

(The statement of activities continues on the following page.)

LOUISVILLE/JEFFERSON COUNTY METRO GOVERNMENT
STATEMENT OF ACTIVITIES (continued)
For the Year Ended June 30, 2005

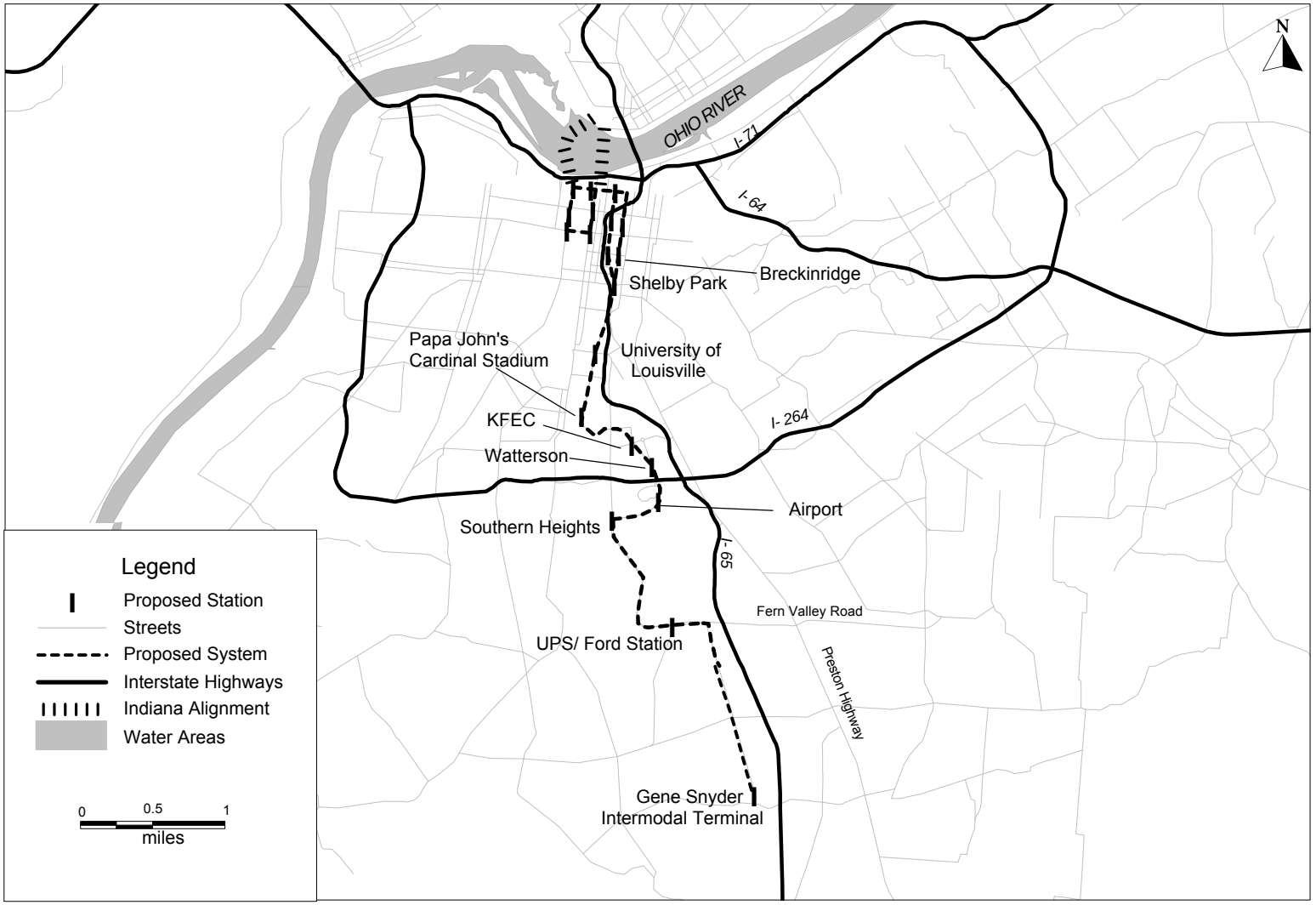
	Primary Government	
	Governmental Activities	Component Units
Net (expense) revenue (from preceding page)	$ (476,093,329)	$ 40,290,089
General revenues:		
Taxes:		
Property taxes, levied for general purposes	120,575,832	
Occupational taxes	275,767,186	
Investment income	3,965,089	9,811,410
Dividends	13,935,078	
Other intergovernmental revenue	4,672,662	
Fees and fines	2,211,315	
Gain on sale of assets	650,000	
Other taxes	319,838	
Rental receipts	4,764,521	
Miscellaneous	5,972,358	2,145,558
Total general revenues	432,833,879	11,956,968
Change in net assets	(43,259,450)	52,247,057
Net assets--beginning, restated	680,258,195	1,246,699,588
Net assets--ending	$ 636,998,745	$ 1,298,946,645

The accompanying notes are an integral part of the financial statements.

Appendix B

Transportation Tomorrow South Central Corridor LRT

Louisville, Kentucky



Federal Transit Administration, 2002

Appendix C

Table 1

2003 Fiscal Year	Own Revenue Sources / Median family income		Own Revenue Sources / Total appraised value		Fund balance / Total revenues		Intergovernmental revenue / total revenues (Gov't act.)		(Total)
Los Angeles	100,976	Philadelphia	5.6%	Salt Lake City	11.93	Sacramento	60.4%	Sacramento	58.2%
Philadelphia	61,314	Saint Louis	4.4%	San Jose	10.52	San Diego	56.3%	San Diego	56.3%
Houston	34,178	Baltimore	4.4%	Portland	9.24	Los Angeles	46.4%	Los Angeles	39.7%
San Francisco	25,558	Cleveland	2.4%	Louisville	4.97	Minneapolis	33.4%	Minneapolis	32.8%
Boston	24,097	Boston	2.2%	Cleveland	4.28	San Jose	30.7%	San Jose	30.4%
Baltimore	22,525	San Francisco	1.9%	Baltimore	3.60	San Francisco	28.7%	San Francisco	21.9%
Denver	18,219	Denver	1.6%	Sacramento	3.59	Cleveland	19.7%	Baltimore	19.9%
San Diego	15,327	Houston	1.5%	Saint Louis	3.46	Baltimore	19.3%	Cleveland	19.5%
Buffalo	14,119	Portland	1.2%	Denver	3.15	Boston	18.5%	Boston	18.4%
Cleveland	14,033	Louisville	1.1%	Houston	3.05	Louisville	6.8%	Buffalo	7.0%
Saint Louis	13,670	Minneapolis	1.1%	San Francisco	2.94	Buffalo	6.8%	Louisville	6.7%
Louisville	13,608	Salt Lake City	0.9%	Minneapolis	2.09	Denver	5.3%	Denver	5.0%
Sacramento	12,860	Sacramento	0.8%	San Diego	2.07	Houston	4.2%	Houston	4.0%
Portland	12,189	San Jose	0.7%	Buffalo	1.64	Philadelphia	2.7%	Philadelphia	2.6%
San Jose	8,847	Los Angeles	0.7%	Philadelphia	0.59	Saint Louis	0.0%	Saint Louis	0.0%
Minneapolis	5,570	San Diego	0.4%	Boston	0.16	Portland	0.0%	Portland	0.0%
Salt Lake City	2,919	Buffalo		Los Angeles	0.15	Salt Lake City	0.0%	Salt Lake City	0.0%
Dallas		Dallas		Dallas		Dallas		Dallas	
Median	14,119		1.3%		3.15		18.5%		18.4%
Warning Trend	High		High		Low		High		High

2003 Fiscal Year	Operating deficit or surplus / Total revenues		Current Ratio (GO Bonds + other debt)		(Total debt)		Debt Burden (GO Bonds + other debt)		(Total debt)
Salt Lake City	51.2%	San Diego	4.21	San Diego	4.21	Minneapolis	$3,521	San Francisco	$10,964
Minneapolis	32.3%	San Jose	3.48	San Jose	3.28	San Francisco	$3,165	Denver	$9,714
Sacramento	21.9%	Salt Lake City	2.73	Salt Lake City	2.46	Philadelphia	$2,934	Cleveland	$6,560
Saint Louis	18.4%	Denver	2.57	Denver	2.15	Sacramento	$2,753	Saint Louis	$5,197
Cleveland	11.1%	Los Angeles	2.28	Los Angeles	2.13	San Jose	$2,545	Philadelphia	$5,034
Boston	3.0%	Buffalo	2.10	Buffalo	2.06	Boston	$2,270	Sacramento	$4,971
Houston	0.6%	San Francisco	1.83	Sacramento	1.77	Los Angeles	$2,243	Houston	$4,676
Baltimore	-0.2%	Sacramento	1.80	San Francisco	1.67	Saint Louis	$1,935	Portland	$4,335
Denver	-0.7%	Cleveland	1.68	Boston	1.57	San Diego	$1,681	San Jose	$4,006
Los Angeles	-2.3%	Boston	1.61	Cleveland	1.55	Denver	$1,532	Minneapolis	$3,978
San Francisco	-4.9%	Minneapolis	1.40	Minneapolis	1.34	Cleveland	$1,499	Baltimore	$2,781
Louisville	-5.5%	Saint Louis	1.12	Saint Louis	0.92	Baltimore	$1,449	Louisville	$2,780
Philadelphia	-12.4%	Louisville	0.97	Louisville	0.87	Buffalo	$1,394	Boston	$2,715
Buffalo	-15.4%	Portland	0.90	Portland	0.82	Houston	$1,320	Los Angeles	$2,360
Portland	-36.9%	Baltimore	0.83	Baltimore	0.81	Salt Lake City	$1,131	Salt Lake City	$2,331
San Diego	-36.9%	Houston	0.79	Houston	0.66	Portland	$1,016	San Diego	$1,681
San Jose	-52.5%	Philadelphia	0.45	Philadelphia	0.41	Louisville	$461	Buffalo	$1,494
Dallas		Dallas		Dallas		Dallas		Dallas	
Median	-0.7%		1.68		1.57		$1,681		$4,006
Warning Trend	Very high/low		Low		Low		High		High

Table 1 (continued)

2003 Fiscal Year	Property tax revenue / total revenues				Revenues		Tax revenues		Expenditures
	(Gov't act.)		(Total)		per capita		per capita		per capita
Portland	91.6%	Portland	91.7%	San Francisco	$2,695	Boston	$2,140	San Francisco	$7,234
Boston	69.5%	Boston	68.9%	Boston	$2,682	San Francisco	$1,997	Sacramento	$5,551
Los Angeles	61.2%	Los Angeles	52.4%	Sacramento	$1,952	Philadelphia	$1,629	Buffalo	$5,160
Baltimore	48.7%	Baltimore	50.2%	Buffalo	$1,766	Buffalo	$1,566	Los Angeles	$4,354
Houston	47.4%	San Jose	45.4%	Baltimore	$1,700	Baltimore	$1,310	Philadelphia	$3,923
Salt Lake City	47.1%	Salt Lake City	45.2%	Philadelphia	$1,667	Saint Louis	$1,266	Boston	$3,841
San Francisco	47.1%	Houston	45.0%	Denver	$1,481	Denver	$1,261	Denver	$3,653
San Jose	45.9%	Minneapolis	42.2%	Saint Louis	$1,350	San Diego	$924	Baltimore	$3,164
Minneapolis	43.0%	San Diego	40.6%	Los Angeles	$1,165	Cleveland	$870	San Diego	$2,790
San Diego	40.6%	San Francisco	36.0%	Cleveland	$1,085	Sacramento	$859	Cleveland	$2,751
Buffalo	34.1%	Buffalo	35.2%	Minneapolis	$1,050	Salt Lake City	$719	Saint Louis	$2,529
Sacramento	34.0%	Sacramento	32.8%	San Diego	$951	San Jose	$695	Portland	$2,157
Louisville	30.3%	Louisville	29.8%	San Jose	$917	Los Angeles	$694	Salt Lake City	$2,153
Denver	19.4%	Denver	18.3%	Salt Lake City	$777	Houston	$657	San Jose	$2,083
Cleveland	16.0%	Cleveland	15.9%	Houston	$756	Minneapolis	$644	Minneapolis	$1,989
Philadelphia	15.8%	Philadelphia	15.6%	Portland	$590	Portland	$566	Louisville	$1,447
Saint Louis	12.2%	Saint Louis	11.8%	Louisville	$585	Louisville	$532	Houston	$1,411
Dallas		Dallas		Dallas		Dallas		Dallas	
	43.0%		40.6%		$1,165		$870		$2,790
	High		High		Low		Low		High

2003 Fiscal Year	Debt Service		Risk Exposure		Tax Leverage Factor				
	Burden		Factor		(Gov't act.)		(Total)		
Denver	56.8%	Sacramento	89.1%	San Diego	3.77	Sacramento	3.82		
Cleveland	52.5%	San Diego	76.6%	Sacramento	3.29	San Diego	3.81		
Salt Lake City	46.7%	Minneapolis	52.9%	Los Angeles	2.72	Los Angeles	3.49		
Saint Louis	42.5%	San Jose	48.6%	San Jose	2.33	San Francisco	2.96		
San Jose	39.2%	Baltimore	30.9%	Buffalo	2.09	Buffalo	2.85		
Portland	17.5%	Los Angeles	27.4%	Baltimore	1.92	Cleveland	2.77		
Philadelphia	16.6%	Boston	24.2%	Philadelphia	1.88	San Jose	2.69		
San Francisco	14.7%	Cleveland	21.5%	Minneapolis	1.80	Minneapolis	2.45		
Houston	11.3%	Houston	20.2%	Cleveland	1.66	Salt Lake City	2.30		
Louisville	10.7%	San Francisco	18.2%	San Francisco	1.61	Denver	2.24		
Boston	8.5%	Denver	14.8%	Boston	1.58	Baltimore	2.21		
Baltimore	8.5%	Saint Louis	7.1%	Denver	1.43	Philadelphia	2.14		
San Diego	7.8%	Salt Lake City	6.3%	Portland	1.38	Houston	1.86		
Sacramento	3.2%	Philadelphia	6.1%	Saint Louis	1.26	Portland	1.74		
Los Angeles	3.1%	Louisville	5.3%	Houston	1.18	Saint Louis	1.69		
Buffalo	3.1%	Buffalo	3.3%	Salt Lake City	1.11	Boston	1.62		
Minneapolis	0.0%	Portland	2.6%	Louisville	1.02	Louisville	1.45		
Dallas		Dallas		Dallas		Dallas			
	11.3%		20.2%		1.66		2.30		
	High		High				High		

Table 2

2004 Fiscal Year	Own Revenue Sources / Median family income		Own Revenue Sources / Total appraised value		Fund balance / Total revenues		Intergovernmental revenue / total revenues (Gov't act.)		(Total)
Los Angeles	112,431	Philadelphia	5.9%	Salt Lake City	12.40	Boston	80.5%	Boston	79.8%
Philadelphia	74,644	Baltimore	4.5%	San Jose	12.00	Sacramento	60.9%	Sacramento	60.3%
Houston	35,042	Saint Louis	3.3%	Portland	8.39	San Diego	54.6%	San Diego	54.6%
Boston	27,750	Cleveland	2.5%	Louisville	4.72	Los Angeles	42.9%	Los Angeles	35.6%
San Francisco	26,811	Boston	2.1%	Dallas	4.66	Minneapolis	30.4%	Minneapolis	30.5%
Dallas	24,744	San Francisco	1.9%	Cleveland	4.39	San Francisco	29.2%	San Jose	26.6%
Baltimore	23,518	Houston	1.4%	Houston	3.75	San Jose	26.4%	San Francisco	21.4%
Sacramento	17,178	Denver	1.4%	Saint Louis	3.70	Baltimore	18.2%	Baltimore	18.7%
Denver	16,177	Portland	1.2%	Baltimore	3.56	Cleveland	17.5%	Cleveland	17.5%
Cleveland	15,525	Dallas	1.2%	Denver	3.13	Buffalo	7.3%	Buffalo	7.1%
San Diego	15,431	Minneapolis	1.1%	San Francisco	2.89	Houston	7.2%	Houston	6.9%
Buffalo	13,580	Louisville	1.1%	Sacramento	2.42	Louisville	5.3%	Louisville	5.2%
Louisville	13,082	Salt Lake City	0.9%	Minneapolis	1.95	Saint Louis	2.0%	Saint Louis	2.0%
Portland	12,786	Sacramento	0.9%	San Diego	1.73	Philadelphia	1.9%	Philadelphia	1.9%
Saint Louis	9,404	San Jose	0.7%	Buffalo	1.37	Denver	1.9%	Denver	1.8%
San Jose	8,446	Los Angeles	0.7%	Philadelphia	0.44	Dallas	1.3%	Dallas	1.3%
Minneapolis	6,040	San Diego	0.4%	Boston	0.28	Portland	0.0%	Portland	0.0%
Salt Lake City	3,015	Buffalo		Los Angeles	0.28	Salt Lake City	0.0%	Salt Lake City	0.0%
Median	15,851		1.2%		3.34		12.4%		12.3%
Warning Trend	High		High		Low		High		High

2004 Fiscal Year	Operating deficit or surplus / Total revenues		Current Ratio (GO Bonds + other debt)		(Total debt)		Debt Burden (GO Bonds + other debt)		(Total debt)
Salt Lake City	63.5%	San Diego	3.66	San Diego	3.66	Minneapolis	$3,813	San Francisco	$10,727
Sacramento	24.8%	San Jose	3.20	San Jose	2.99	San Francisco	$3,221	Denver	$10,322
Los Angeles	14.0%	Salt Lake City	2.77	Salt Lake City	2.51	Philadelphia	$3,021	Cleveland	$6,677
Boston	12.1%	Los Angeles	2.30	Los Angeles	2.14	San Jose	$2,669	Saint Louis	$5,180
Dallas	9.7%	Denver	2.05	Cleveland	1.72	Sacramento	$2,419	Houston	$5,157
Saint Louis	2.6%	Cleveland	1.90	Denver	1.68	Boston	$2,298	Philadelphia	$5,005
Louisville	0.8%	San Francisco	1.74	Sacramento	1.63	Los Angeles	$2,127	San Jose	$4,423
Cleveland	0.8%	Boston	1.64	Boston	1.61	Denver	$2,094	Portland	$4,222
San Francisco	0.4%	Minneapolis	1.64	San Francisco	1.57	Saint Louis	$2,024	Minneapolis	$4,195
Baltimore	-0.2%	Sacramento	1.64	Minneapolis	1.56	San Diego	$1,886	Sacramento	$3,703
Minneapolis	-5.8%	Buffalo	1.48	Buffalo	1.46	Cleveland	$1,728	Baltimore	$2,941
Portland	-8.3%	Dallas	1.36	Dallas	1.15	Buffalo	$1,684	Louisville	$2,767
Philadelphia	-12.2%	Louisville	1.24	Louisville	1.09	Houston	$1,499	Boston	$2,721
Houston	-23.2%	Saint Louis	1.00	Saint Louis	0.81	Baltimore	$1,472	Dallas	$2,451
Denver	-23.6%	Portland	0.78	Portland	0.70	Salt Lake City	$1,240	Salt Lake City	$2,256
San Diego	-31.1%	Houston	0.72	Houston	0.67	Dallas	$1,025	Los Angeles	$2,238
Buffalo	-32.6%	Baltimore	0.64	Baltimore	0.63	Portland	$972	San Diego	$1,886
San Jose	-66.6%	Philadelphia	0.57	Philadelphia	0.52	Louisville	$433	Buffalo	$1,766
Median	0.1%		1.64		1.57		$1,955		$3,949
Warning Trend	Very high/low		Low		Low		High		High

Table 2 (continued)

2004 Fiscal Year	Property tax revenue / total revenues				Revenues		Tax revenues		Expenditures
	(Gov't act.)		(Total)		per capita		per capita		per capita
Portland	94.6%	Portland	95.2%	San Francisco	$2,702	San Francisco	$2,082	San Francisco	$6,978
Dallas	65.0%	Dallas	62.5%	Boston	$2,668	Philadelphia	$1,675	Buffalo	$5,329
Los Angeles	64.8%	Los Angeles	53.7%	Sacramento	$1,843	Buffalo	$1,534	Sacramento	$5,307
San Jose	52.2%	San Jose	52.5%	Philadelphia	$1,731	Baltimore	$1,336	Los Angeles	$4,062
San Francisco	50.7%	Baltimore	50.6%	Baltimore	$1,692	Denver	$1,243	Philadelphia	$4,004
Houston	49.7%	Houston	47.8%	Buffalo	$1,680	Saint Louis	$1,199	Boston	$3,887
Baltimore	49.3%	Salt Lake City	47.1%	Denver	$1,358	San Diego	$922	Denver	$3,631
Salt Lake City	48.8%	Minneapolis	46.1%	Saint Louis	$1,256	Sacramento	$891	Baltimore	$3,263
Minneapolis	46.1%	San Diego	43.4%	Los Angeles	$1,210	Cleveland	$833	San Diego	$2,752
San Diego	43.4%	San Francisco	37.2%	Minneapolis	$1,083	Los Angeles	$784	Cleveland	$2,749
Sacramento	34.7%	Sacramento	34.4%	Cleveland	$1,046	Salt Lake City	$729	Saint Louis	$2,639
Buffalo	33.6%	Buffalo	32.4%	San Diego	$937	Dallas	$725	Minneapolis	$2,163
Louisville	29.5%	Louisville	29.0%	Salt Lake City	$777	Minneapolis	$706	Salt Lake City	$2,099
Denver	22.3%	Denver	20.8%	San Jose	$736	San Jose	$662	Portland	$2,052
Philadelphia	15.3%	Philadelphia	15.2%	Houston	$693	Portland	$636	San Jose	$1,976
Cleveland	13.9%	Cleveland	13.9%	Dallas	$673	Houston	$630	Houston	$1,518
Saint Louis	13.2%	Saint Louis	13.1%	Portland	$641	Louisville	$561	Louisville	$1,287
Boston	7.9%	Boston	7.9%	Louisville	$604	Boston	$496	Dallas	$1,278
	44.7%		40.3%		$1,146		$809		$2,751
	High		High		Low		Low		High

2004 Fiscal Year	Debt Service		Risk Exposure		Tax Leverage Factor				
	Burden		Factor		(Gov't act.)		(Total)		
Denver	64.3%	Boston	86.5%	San Diego	3.61	San Diego	3.64		
Cleveland	53.5%	Sacramento	70.8%	Sacramento	2.85	Sacramento	3.14		
Saint Louis	45.2%	San Diego	69.9%	Los Angeles	2.39	Los Angeles	3.07		
Salt Lake City	42.0%	Minneapolis	44.2%	San Jose	2.27	Buffalo	2.96		
San Jose	28.9%	Baltimore	27.2%	Buffalo	2.15	Cleveland	2.75		
Dallas	18.9%	Cleveland	22.1%	Baltimore	1.93	San Francisco	2.73		
Philadelphia	14.4%	San Jose	21.8%	Philadelphia	1.89	San Jose	2.65		
San Francisco	13.0%	Los Angeles	19.3%	Minneapolis	1.76	Minneapolis	2.41		
Portland	12.7%	Houston	11.3%	Saint Louis	1.69	Denver	2.27		
Houston	11.1%	San Francisco	10.6%	Cleveland	1.62	Salt Lake City	2.21		
Baltimore	8.8%	Buffalo	10.0%	Boston	1.50	Baltimore	2.21		
Boston	8.6%	Denver	7.3%	Denver	1.47	Saint Louis	2.20		
Louisville	8.3%	Saint Louis	6.6%	San Francisco	1.43	Philadelphia	2.15		
San Diego	6.8%	Salt Lake City	5.1%	Houston	1.29	Houston	2.05		
Buffalo	3.2%	Dallas	4.9%	Portland	1.22	Portland	1.56		
Los Angeles	2.7%	Louisville	4.4%	Salt Lake City	1.05	Boston	1.53		
Sacramento	2.4%	Philadelphia	3.0%	Dallas	1.02	Dallas	1.43		
Minneapolis	0.0%	Portland	1.3%	Louisville	0.87	Louisville	1.31		
	11.9%		10.9%		1.66		2.24		
	High		High				High		

Table 3

2005 Fiscal Year	Own Revenue Sources / Median family income		Own Revenue Sources / Total appraised value		Fund balance / Total revenues		Intergovernmental revenue / total revenues (Gov't act.)		(Total)
Los Angeles	134,845	Philadelphia	6.2%	Salt Lake City	12.15	Sacramento	47.1%	Sacramento	46.1%
Philadelphia	78,011	Baltimore	4.6%	San Jose	9.60	Boston	30.5%	Boston	30.2%
Houston	35,042	Saint Louis	4.1%	Portland	7.77	San Jose	29.7%	San Jose	29.6%
San Francisco	30,614	Cleveland	2.2%	Louisville	4.35	Los Angeles	27.3%	Minneapolis	23.7%
Boston	28,779	Boston	2.1%	Cleveland	4.26	Minneapolis	23.4%	Los Angeles	23.3%
Baltimore	25,698	San Francisco	2.1%	Dallas	4.21	Cleveland	20.1%	Baltimore	20.1%
Dallas	24,459	Houston	1.4%	Houston	3.75	Baltimore	19.6%	Cleveland	20.0%
San Diego	19,339	Denver	1.4%	Saint Louis	3.66	San Diego	19.6%	San Diego	19.5%
Sacramento	17,838	Portland	1.2%	Baltimore	3.28	San Francisco	15.0%	Buffalo	11.9%
Denver	16,232	Dallas	1.2%	Denver	3.09	Buffalo	12.2%	San Francisco	11.6%
Buffalo	14,331	Louisville	1.2%	San Francisco	2.81	Louisville	8.0%	Louisville	7.8%
Louisville	14,304	Minneapolis	1.2%	Sacramento	2.79	Denver	7.6%	Denver	7.3%
Portland	13,656	Salt Lake City	1.1%	San Diego	2.25	Houston	7.2%	Houston	6.9%
Cleveland	12,388	Sacramento	0.8%	Minneapolis	2.15	Dallas	3.8%	Dallas	3.5%
Saint Louis	11,664	San Jose	0.8%	Los Angeles	0.47	Philadelphia	3.2%	Philadelphia	3.2%
San Jose	9,815	Los Angeles	0.8%	Boston	0.46	Saint Louis	0.2%	Saint Louis	0.2%
Minneapolis	6,263	San Diego	0.4%	Philadelphia	0.38	Portland	0.0%	Portland	0.0%
Salt Lake City	3,613	Buffalo		Buffalo	0.34	Salt Lake City	0.0%	Salt Lake City	0.0%
Median	17,035		1.2%		3.18		13.6%		11.8%
Warning Trend	High		High		Low		High		High

2005 Fiscal Year	Operating deficit or surplus / Total revenues		Current Ratio (GO Bonds + other debt)		(Total debt)		Debt Burden (GO Bonds + other debt)		(Total debt)
Salt Lake City	79.3%	San Jose	3.30	San Jose	3.09	Minneapolis	$3,879	San Francisco	$10,765
Sacramento	25.4%	Salt Lake City	3.13	Salt Lake City	2.82	San Francisco	$3,623	Denver	$9,860
Boston	23.8%	Los Angeles	2.64	Los Angeles	2.41	Sacramento	$3,080	Cleveland	$6,507
Los Angeles	22.4%	Denver	1.95	San Diego	1.80	Philadelphia	$2,986	Houston	$5,157
Denver	22.0%	Cleveland	1.88	Cleveland	1.73	Buffalo	$2,914	Saint Louis	$5,046
San Diego	20.6%	San Francisco	1.86	San Francisco	1.70	San Jose	$2,792	Philadelphia	$5,037
Baltimore	13.4%	San Diego	1.80	Boston	1.58	Boston	$2,167	San Jose	$4,548
Dallas	12.3%	Boston	1.60	Denver	1.55	Saint Louis	$2,097	Portland	$4,413
Cleveland	12.0%	Louisville	1.54	Sacramento	1.50	Los Angeles	$1,970	Sacramento	$4,293
Saint Louis	8.4%	Sacramento	1.52	Louisville	1.35	Denver	$1,907	Minneapolis	$4,214
San Francisco	7.3%	Dallas	1.38	Dallas	1.19	San Diego	$1,850	Baltimore	$3,021
Minneapolis	6.2%	Minneapolis	1.21	Minneapolis	1.16	Cleveland	$1,766	Buffalo	$2,914
Louisville	2.0%	Houston	1.10	Houston	0.99	Houston	$1,499	Louisville	$2,672
Philadelphia	-3.4%	Buffalo	0.93	Buffalo	0.93	Baltimore	$1,440	Dallas	$2,589
Portland	-23.0%	Saint Louis	0.90	Portland	0.77	Dallas	$1,098	Boston	$2,561
Houston	-23.2%	Portland	0.82	Saint Louis	0.76	Portland	$1,091	Los Angeles	$2,072
San Jose	-28.4%	Baltimore	0.74	Baltimore	0.72	Salt Lake City	$709	Salt Lake City	$1,970
Buffalo	-43.7%	Philadelphia	0.49	Philadelphia	0.45	Louisville	$262	San Diego	$1,850
Median	10.2%		1.53		1.43		$1,939		$4,254
Warning Trend	Very high/low		Low		Low		High		High

Table 3 (continued)

2005 Fiscal Year	Property tax revenue / total revenues				Revenues		Tax revenues		Expenditures
	(Gov't act.)		(Total)		per capita		per capita		per capita
Portland	92.5%	Portland	92.1%	Boston	$3,380	San Francisco	$2,353	San Francisco	$6,856
Los Angeles	76.3%	San Diego	66.4%	San Francisco	$2,757	Boston	$2,297	Sacramento	$5,206
San Diego	66.5%	Los Angeles	65.1%	Buffalo	$1,897	Philadelphia	$1,720	Buffalo	$4,876
Boston	59.6%	Boston	59.1%	Baltimore	$1,853	Buffalo	$1,654	Los Angeles	$4,021
San Francisco	58.0%	Dallas	52.9%	Philadelphia	$1,811	Baltimore	$1,431	Philadelphia	$3,962
Dallas	57.5%	Minneapolis	52.6%	Sacramento	$1,687	Denver	$1,260	Boston	$3,913
Minneapolis	51.9%	San Jose	51.0%	Denver	$1,438	Saint Louis	$1,212	Denver	$3,184
San Jose	51.3%	Houston	47.8%	Los Angeles	$1,314	Los Angeles	$990	Baltimore	$2,994
Houston	49.7%	Sacramento	46.6%	Saint Louis	$1,256	Sacramento	$917	Cleveland	$2,665
Sacramento	47.6%	Baltimore	45.7%	Cleveland	$1,091	Cleveland	$868	Saint Louis	$2,492
Salt Lake City	47.6%	Salt Lake City	45.5%	Minneapolis	$992	Salt Lake City	$755	San Diego	$2,392
Baltimore	44.5%	San Francisco	44.9%	San Jose	$864	Minneapolis	$736	Portland	$2,222
Buffalo	35.9%	Buffalo	35.0%	Salt Lake City	$820	San Jose	$719	Salt Lake City	$2,094
Louisville	27.9%	Louisville	27.1%	San Diego	$769	Dallas	$696	Minneapolis	$2,037
Denver	24.2%	Denver	23.2%	Dallas	$740	San Diego	$672	San Jose	$1,807
Cleveland	14.5%	Cleveland	14.4%	Houston	$693	Houston	$630	Houston	$1,518
Philadelphia	14.4%	Philadelphia	14.3%	Portland	$653	Portland	$628	Louisville	$1,385
Saint Louis	13.4%	Saint Louis	13.3%	Louisville	$635	Louisville	$566	Dallas	$1,328
	48.7%		46.1%		$1,174		$892		$2,579
	High		High		Low		Low		High

2005 Fiscal Year	Debt Service		Risk Exposure		Tax Leverage Factor				
	Burden		Factor		(Gov't act.)		(Total)		
Denver	62.9%	Sacramento	51.4%	Sacramento	2.81	Cleveland	3.07		
Cleveland	46.3%	Boston	43.2%	San Diego	2.58	Sacramento	3.07		
San Jose	36.4%	San Jose	35.2%	Buffalo	2.28	Los Angeles	2.62		
Saint Louis	35.0%	Baltimore	30.3%	Los Angeles	2.03	San Diego	2.61		
Minneapolis	24.9%	Minneapolis	28.2%	Philadelphia	1.84	Buffalo	2.53		
Dallas	20.3%	Cleveland	25.2%	San Jose	1.81	San Francisco	2.43		
Salt Lake City	16.3%	San Diego	19.9%	Cleveland	1.74	San Jose	2.16		
Philadelphia	13.8%	Buffalo	15.1%	Baltimore	1.66	Philadelphia	2.10		
Sacramento	13.8%	Houston	11.3%	Boston	1.51	Minneapolis	2.06		
San Diego	13.2%	Denver	11.0%	Minneapolis	1.45	Houston	2.05		
San Francisco	12.1%	Los Angeles	10.7%	Saint Louis	1.33	Denver	1.97		
Portland	11.9%	Louisville	6.7%	Houston	1.29	Baltimore	1.91		
Houston	11.1%	Salt Lake City	6.0%	Portland	1.27	Salt Lake City	1.90		
Baltimore	8.6%	Dallas	5.4%	San Francisco	1.25	Saint Louis	1.73		
Louisville	6.5%	Philadelphia	5.0%	Denver	1.19	Portland	1.64		
Boston	6.3%	Saint Louis	4.5%	Dallas	1.04	Boston	1.52		
Buffalo	2.8%	San Francisco	2.8%	Salt Lake City	0.93	Dallas	1.51		
Los Angeles	1.3%	Portland	2.4%	Louisville	0.90	Louisville	1.34		
	13.5%		11.2%		1.48		2.05		
	High		High		High		High		

Table 4

US Census Data 2002					
	Total Population		Population Density		Unemployment Rate %
Salt Lake City	181,711	Salt Lake City	1,667	Minneapolis	5
Buffalo	287,469	Louisville	1,806	San Diego	5.1
Saint Louis	347,252	Houston	3,458	Buffalo	5.7
Minneapolis	377,002	Dallas	3,510	Louisville	5.7
Sacramento	433,801	Denver	3,645	Boston	5.9
Cleveland	468,126	San Diego	3,864	Cleveland	6.5
Portland	537,752	Portland	4,013	Sacramento	6.7
Denver	557,666	Sacramento	4,472	Denver	7
Boston	585,366	San Jose	5,120	San Francisco	7
Baltimore	636,141	Saint Louis	5,601	Houston	7.2
Louisville	695,416	Cleveland	6,002	Baltimore	7.3
San Francisco	761,983	Minneapolis	6,855	Salt Lake City	7.3
San Jose	896,076	Buffalo	7,011	Philadelphia	7.4
Dallas	1,203,861	Baltimore	7,854	Los Angeles	7.5
San Diego	1,251,808	Los Angeles	8,073	Saint Louis	8.1
Philadelphia	1,486,712	Philadelphia	11,013	Portland	8.2
Houston	2,002,144	Boston	12,195	Dallas	8.9
Los Angeles	3,786,010	San Francisco	16,212	San Jose	9.5
Median	610,754		5,361		7.1
Warning Trend	Low		Low		High

*population density in persons per square mile

Table 5

US Census Data 2003					
	Total Population		Population Density		Unemployment Rate %
Salt Lake City	180,651	Salt Lake City	1,657	San Diego	5.2
Buffalo	285,465	Louisville	1,816	Minneapolis	5.3
Saint Louis	348,039	Houston	3,471	Buffalo	6
Minneapolis	375,979	Dallas	3,513	Louisville	6.2
Sacramento	444,720	Denver	3,634	Boston	6.4
Cleveland	463,503	San Diego	3,897	Cleveland	6.4
Portland	538,948	Portland	4,022	Salt Lake City	6.7
Denver	556,039	Sacramento	4,585	Sacramento	6.9
Boston	577,922	San Jose	5,128	San Francisco	6.9
Baltimore	643,304	Saint Louis	5,614	Denver	7.4
Louisville	699,017	Cleveland	5,942	Baltimore	7.6
San Francisco	751,908	Minneapolis	6,836	Philadelphia	7.6
San Jose	897,399	Buffalo	6,963	Los Angeles	7.8
Dallas	1,205,084	Baltimore	7,942	Houston	8
San Diego	1,262,699	Los Angeles	8,144	Portland	8.7
Philadelphia	1,476,953	Philadelphia	10,940	Saint Louis	8.9
Houston	2,009,669	Boston	12,040	Dallas	9.1
Los Angeles	3,819,413	San Francisco	15,998	San Jose	9.5
Median	610,613		5,371		7.15
Warning Trend	Low		Low		High

*population density in persons per square mile

Table 6

US Census Data 2004					
	Total Population		Population Density		Unemployment Rate %
Salt Lake City	178,605	Salt Lake City	1,639	San Diego	4.7
Buffalo	282,864	Louisville	1,818	Minneapolis	5.1
Saint Louis	343,279	Houston	3,476	Louisville	5.2
Minneapolis	373,943	Dallas	3,529	Cleveland	5.4
Sacramento	454,330	Denver	3,639	Salt Lake City	5.4
Cleveland	458,684	San Diego	3,900	Boston	5.5
Portland	533,492	Portland	3,981	Buffalo	5.8
Denver	556,835	Sacramento	4,684	San Francisco	5.9
Boston	569,165	San Jose	5,169	Sacramento	6.5
Baltimore	636,251	Saint Louis	5,537	Denver	6.7
Louisville	700,030	Cleveland	5,881	Los Angeles	7.3
San Francisco	744,230	Minneapolis	6,799	Baltimore	7.4
San Jose	904,522	Buffalo	6,899	Houston	7.4
Dallas	1,210,393	Baltimore	7,855	San Jose	7.4
San Diego	1,263,756	Los Angeles	8,199	Philadelphia	7.5
Philadelphia	1,470,151	Philadelphia	10,890	Portland	7.7
Houston	2,012,626	Boston	11,858	Dallas	8.1
Los Angeles	3,845,541	San Francisco	15,835	Saint Louis	9.1
Median	602,708		5,353		6.6
Warning Trend	Low		Low		High

*population density in persons per square mile

Table 7

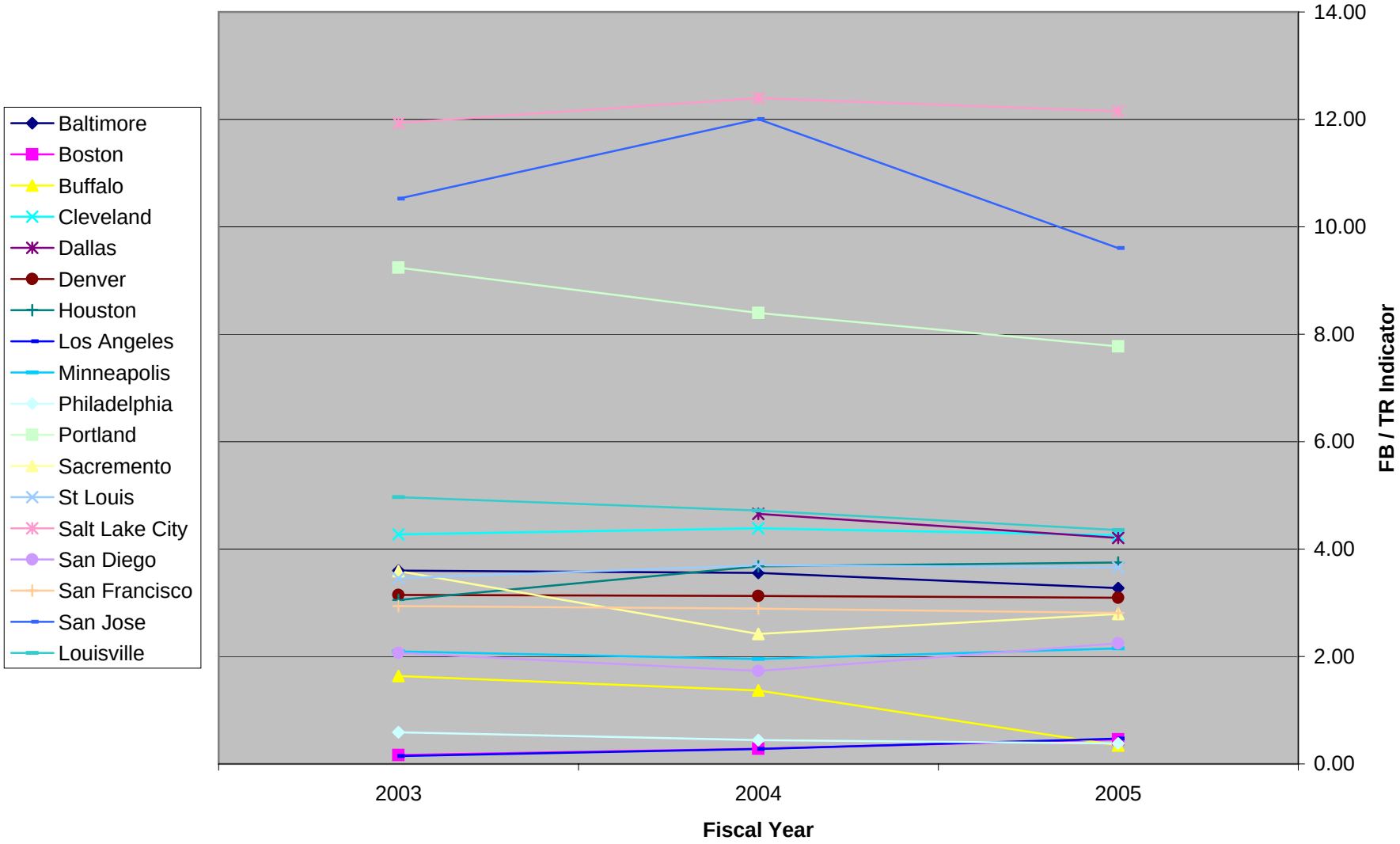
2005	*Financial Indicators*										*Environmental Indicators*		
Louisville	14,304	1.2%	4.35	8.0%	7.8%	27.9%	27.1%	$635	$566	$1,385	700,030	1,818	5.2
Median	17,035	1.2%	3.18	13.6%	11.8%	48.7%	46.1%	$1,174	$892	$2,579	602,708	5,353	6.6
Warning Trend	High	High	Low	High	High	High	High	Low	Low	High	Low	Low	High
Comparison	+	+	+	+	+	+	+	-	-	+	+	-	+
Louisville	2.0%	1.54	1.35	$262	$2,672	6.5%	6.7%	0.90	1.34				
Median	10.2%	1.53	1.43	$1,939	$4,254	13.5%	11.2%	1.48	2.05				
Warning Trend	Very high/low	Low	Low	High	High	High	High	High	High				
Comparison	+	+	-	+	+	+	+	+	+				
2004													
Louisville	13,082	1.1%	4.72	5.3%	5.2%	29.5%	29.0%	$604	$561	$1,287	699,017	1,816	6.2
Median	15,851	1.2%	3.34	12.4%	12.3%	44.7%	40.3%	$1,146	$809	$2,751	610,613	5,371	7.2
Warning Trend	High	High	Low	High	High	High	High	Low	Low	High	Low	Low	High
Comparison	+	+	+	+	+	+	+	-	-	+	+	-	+
Louisville	0.8%	1.24	1.09	$433	$2,767	8.3%	4.4%	0.87	1.31				
Median	0.1%	1.64	1.57	$1,955	$3,949	11.9%	10.9%	1.66	2.24				
Warning Trend	Very high/low	Low	Low	High	High	High	High	High	High				
Comparison	+	-	-	+	+	+	+	+	+				
2003													
Louisville	13,608	1.1%	4.97	6.8%	6.7%	30.3%	29.8%	$585	$532	$1,447	695,416	1,806	5.7
Median	14,119	1.3%	3.15	18.5%	18.4%	43.0%	40.6%	$1,165	$870	$2,790	610,754	5,361	7.1
Warning Trend	High	High	Low	High	High	High	High	Low	Low	High	Low	Low	High
Comparison	+	+	+	+	+	+	+	-	-	+	+	-	+
Louisville	-5.5%	0.97	0.87	$461	$2,780	10.7%	5.3%	1.02	1.45				
Median	-0.7%	1.68	1.57	$1,681	$4,006	11.3%	20.2%	1.66	2.30				
Warning Trend	Very high/low	Low	Low	High	High	High	High	High	High				
Comparison	+	-	-	+	+	+	+	+	+				

2005	
18	Positives
4	Negatives

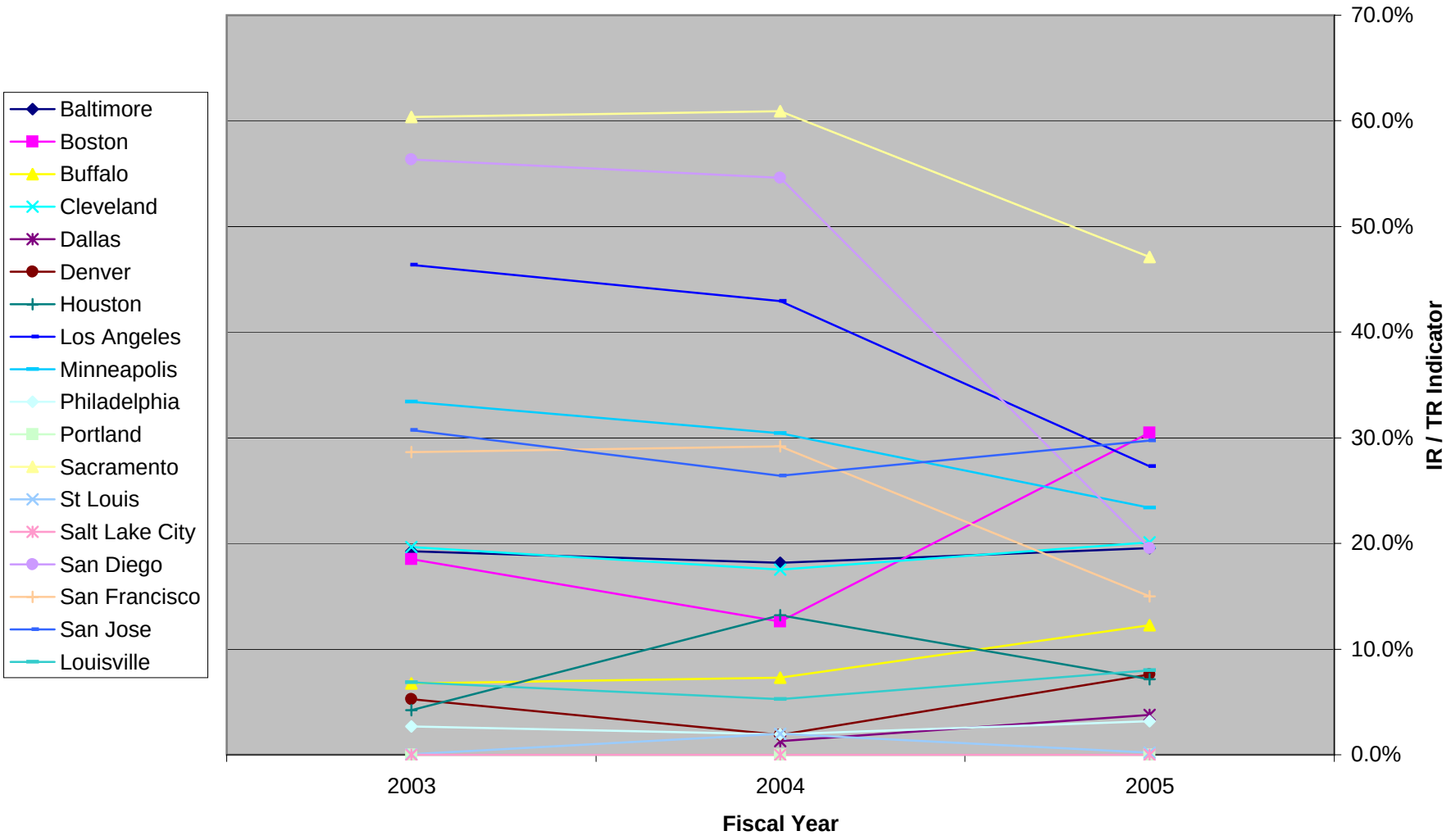
2004	
17	Positives
5	Negatives

2003	
17	Positives
5	Negatives

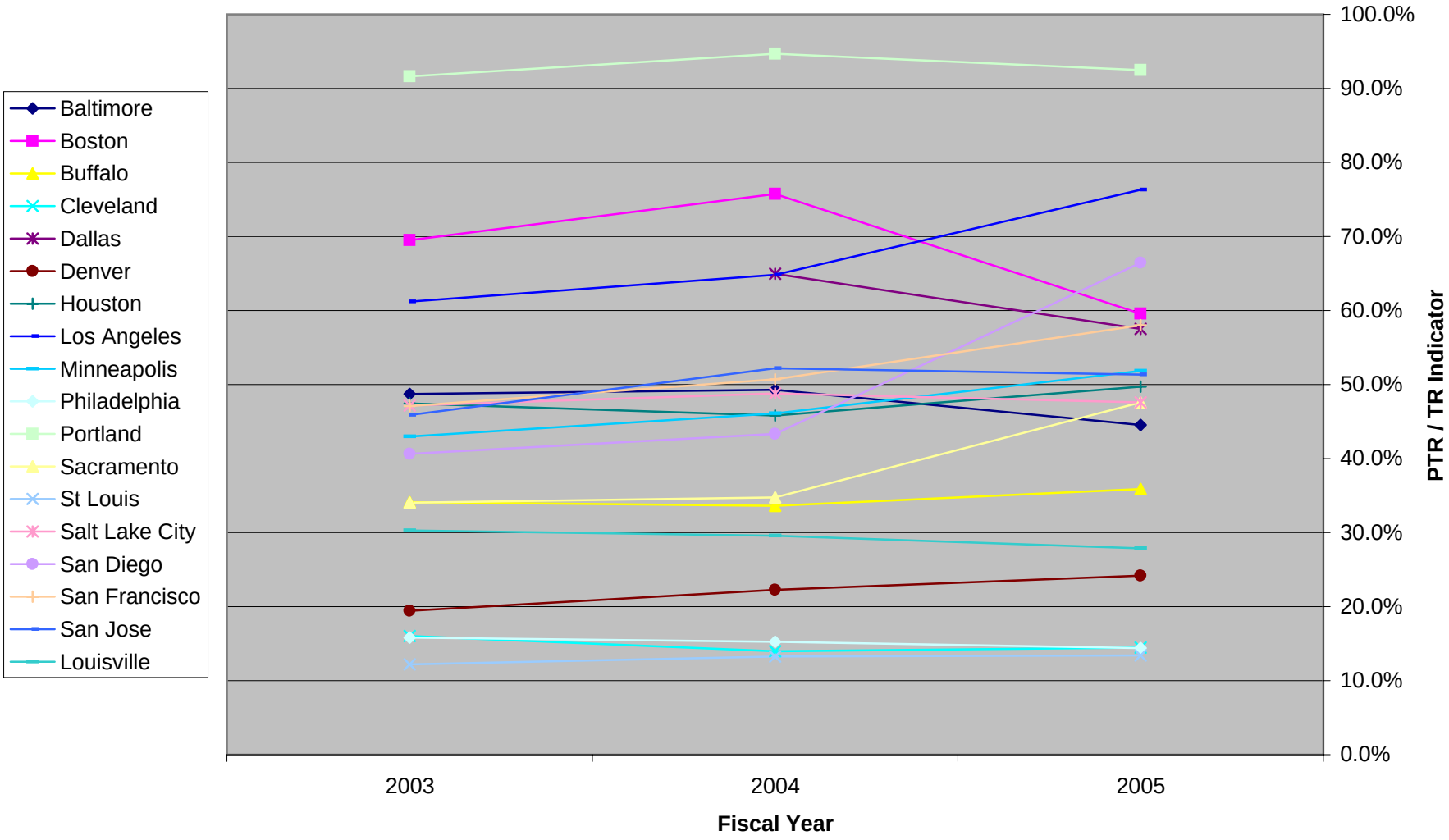
Fund Balance / Total Revenues



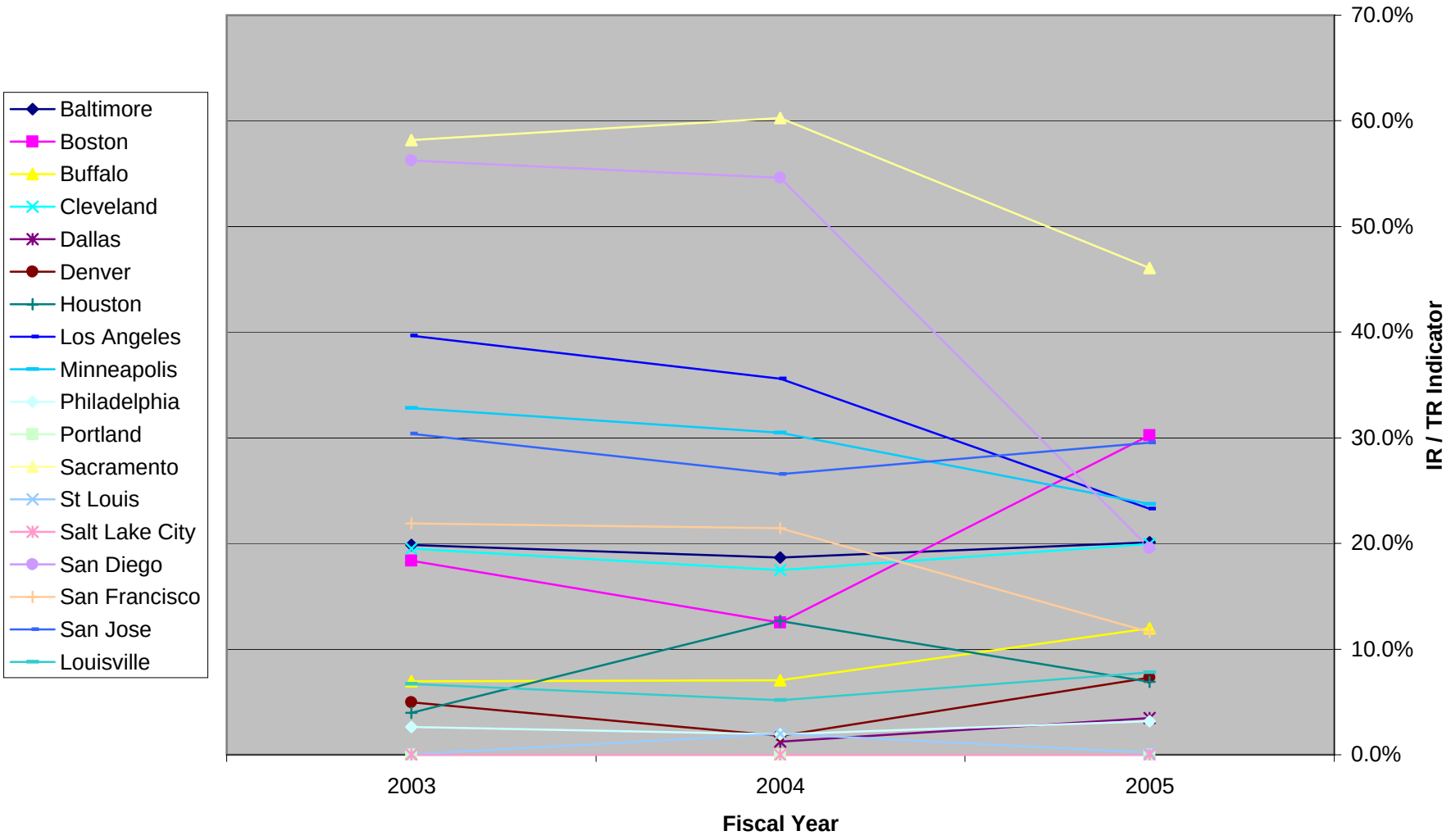
Intergovernmental Revenues / Total Revenues
(Governmental Activities)



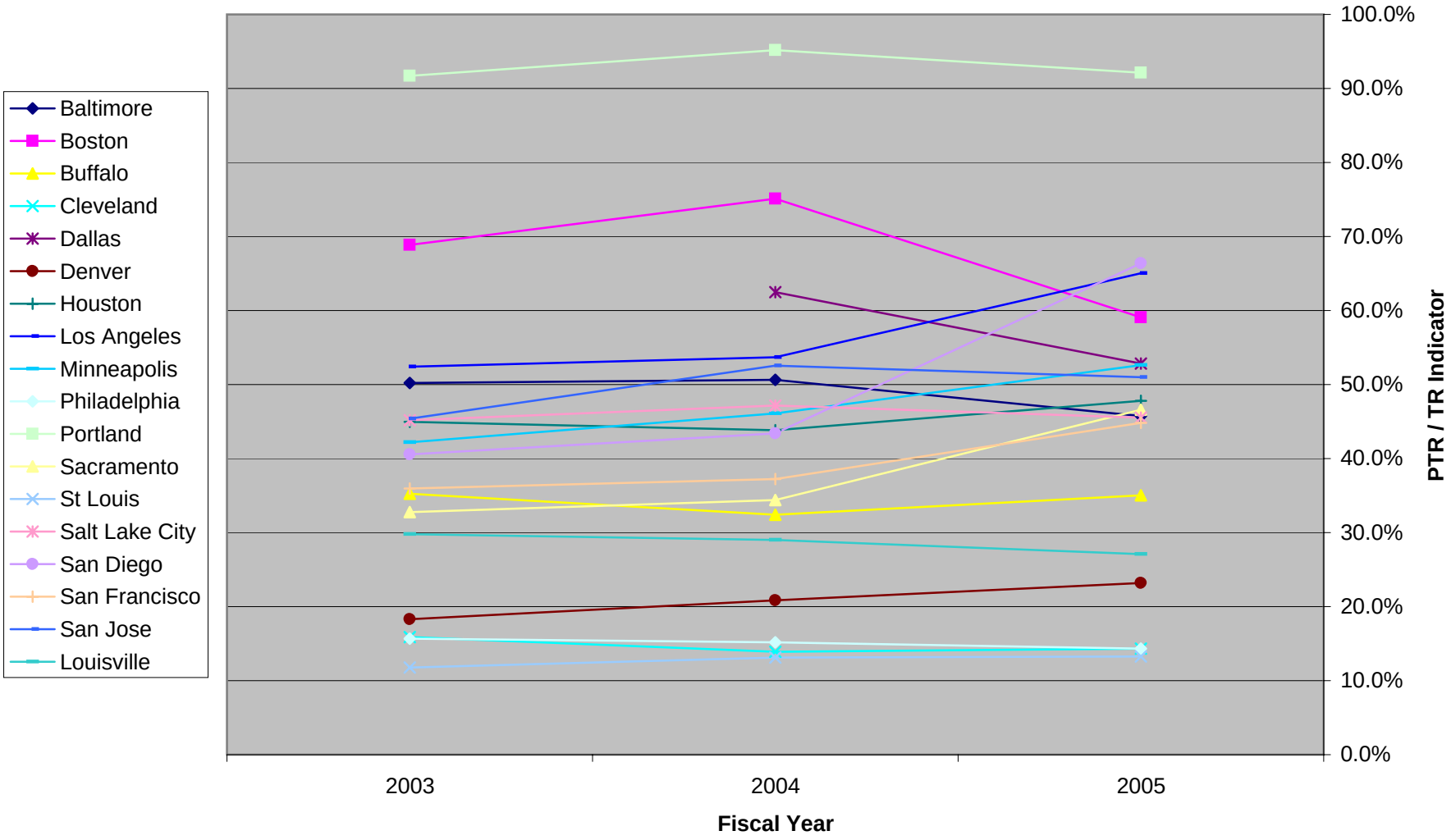
Property Tax Revenues / Total Revenues
(Governmental Activities)



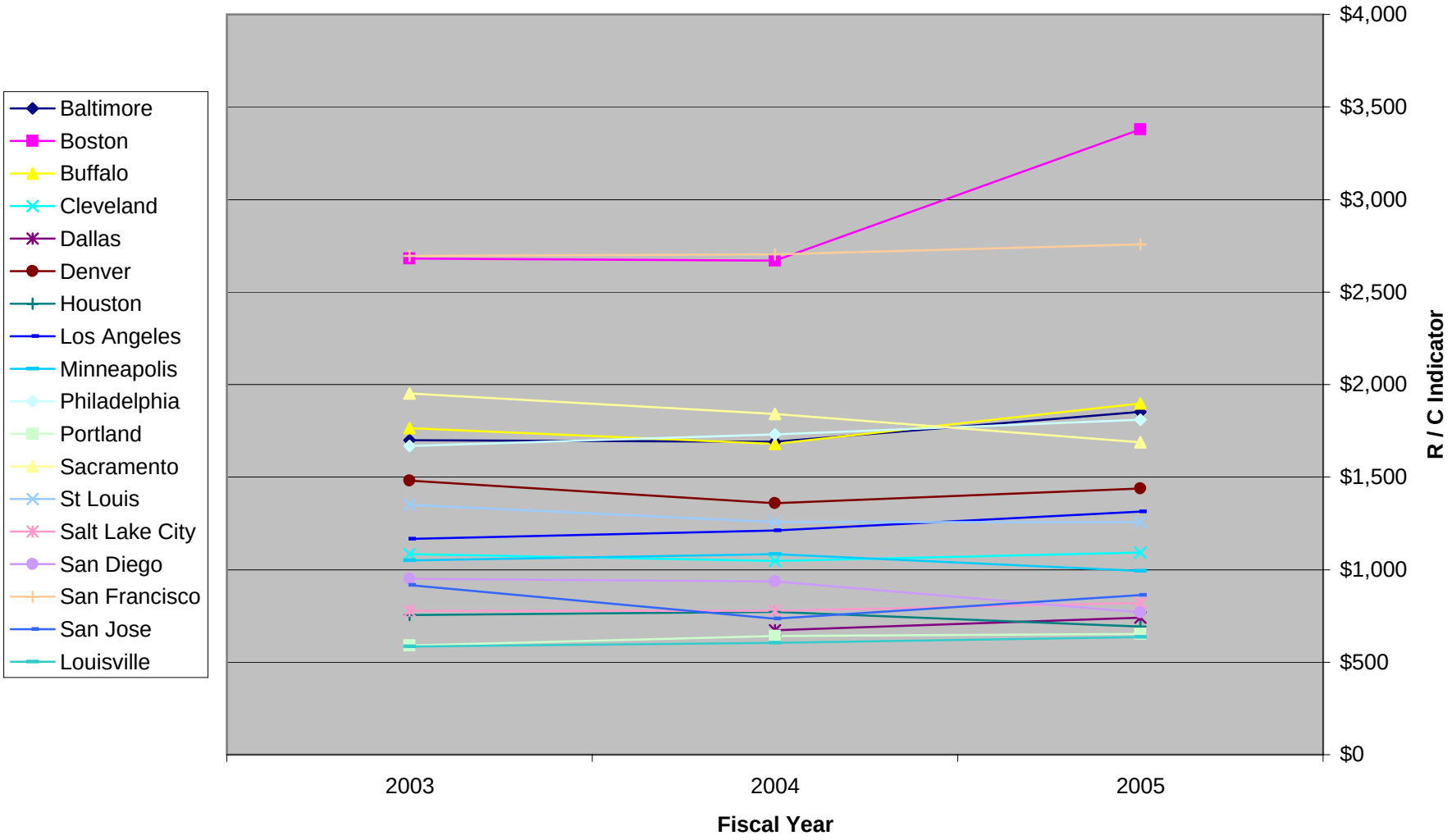
Intergovernmental Revenue / Total Revenues (total)



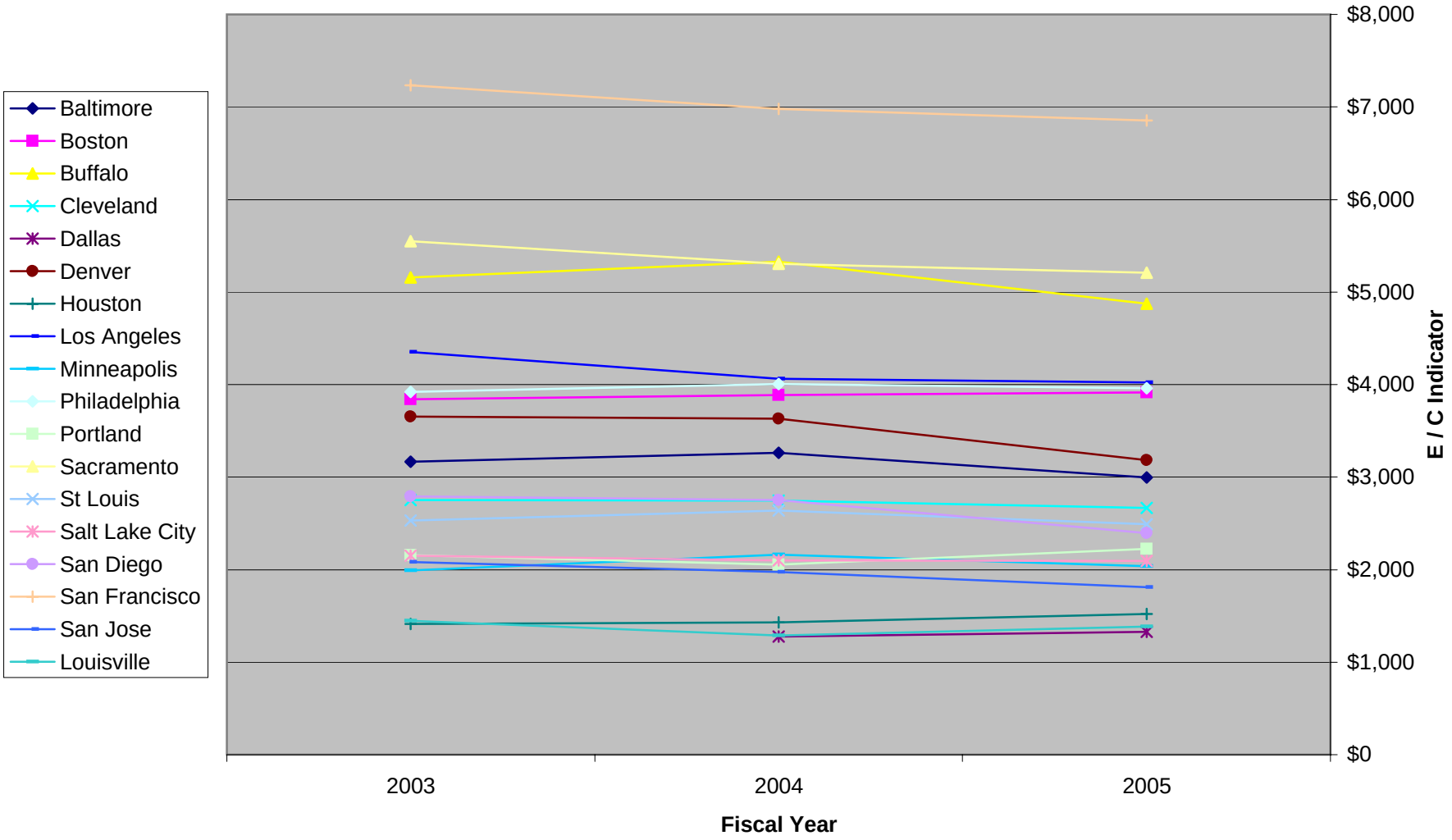
Property Tax Revenues / Total Revenues (total)



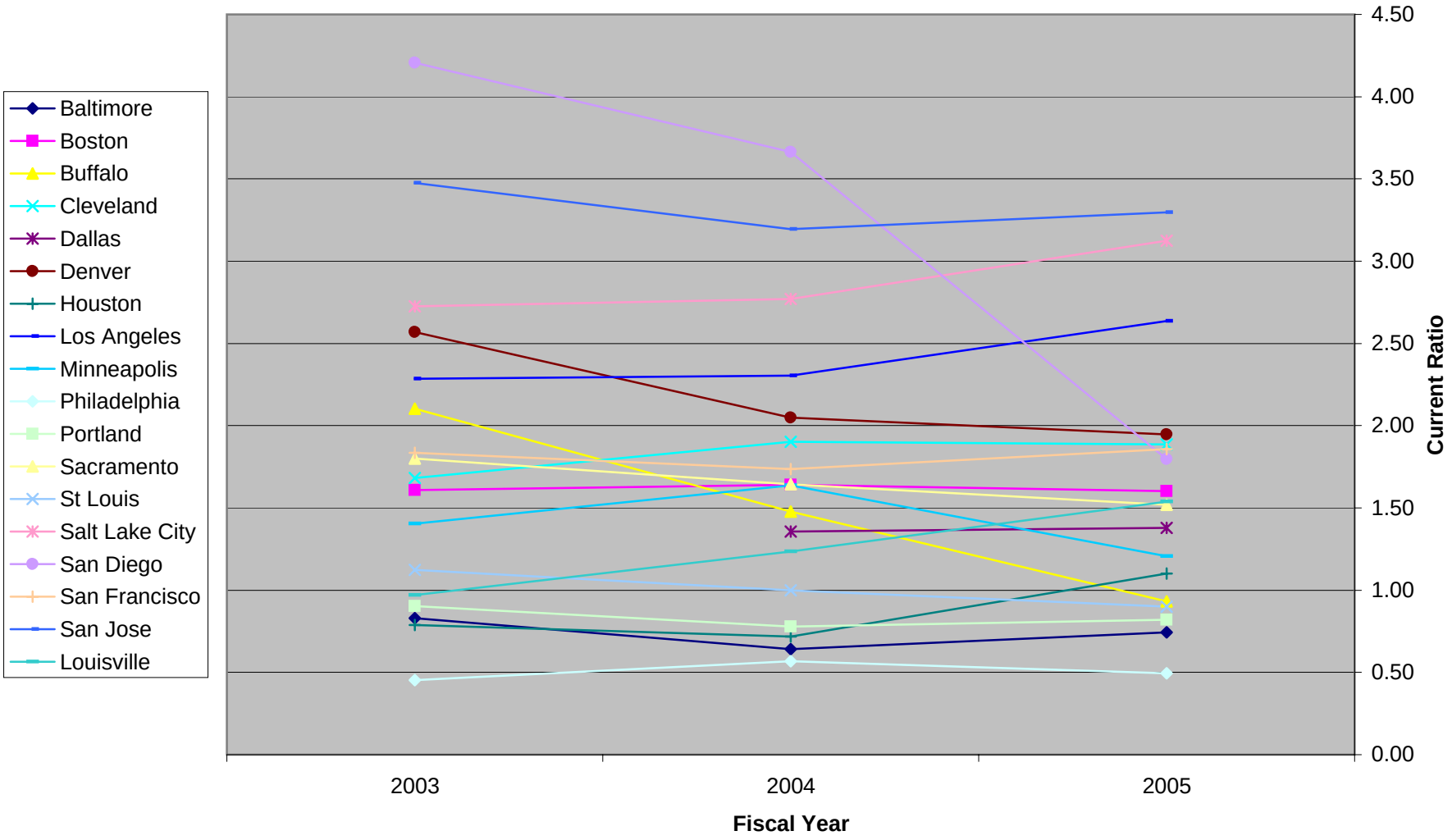
Revenues per Capita
(2005 constant dollars)



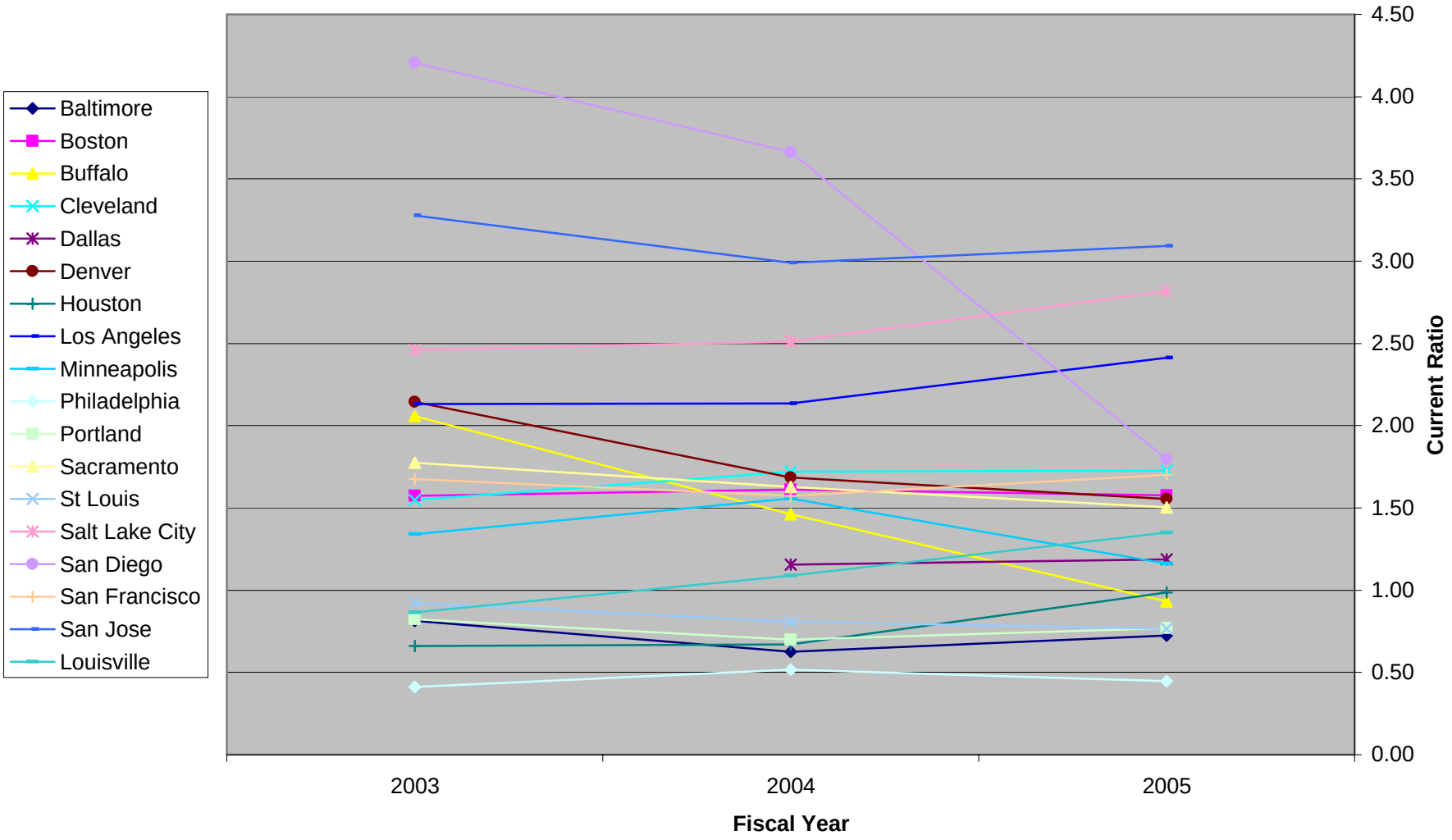
Expenditures per Capita
(2005 constant dollars)



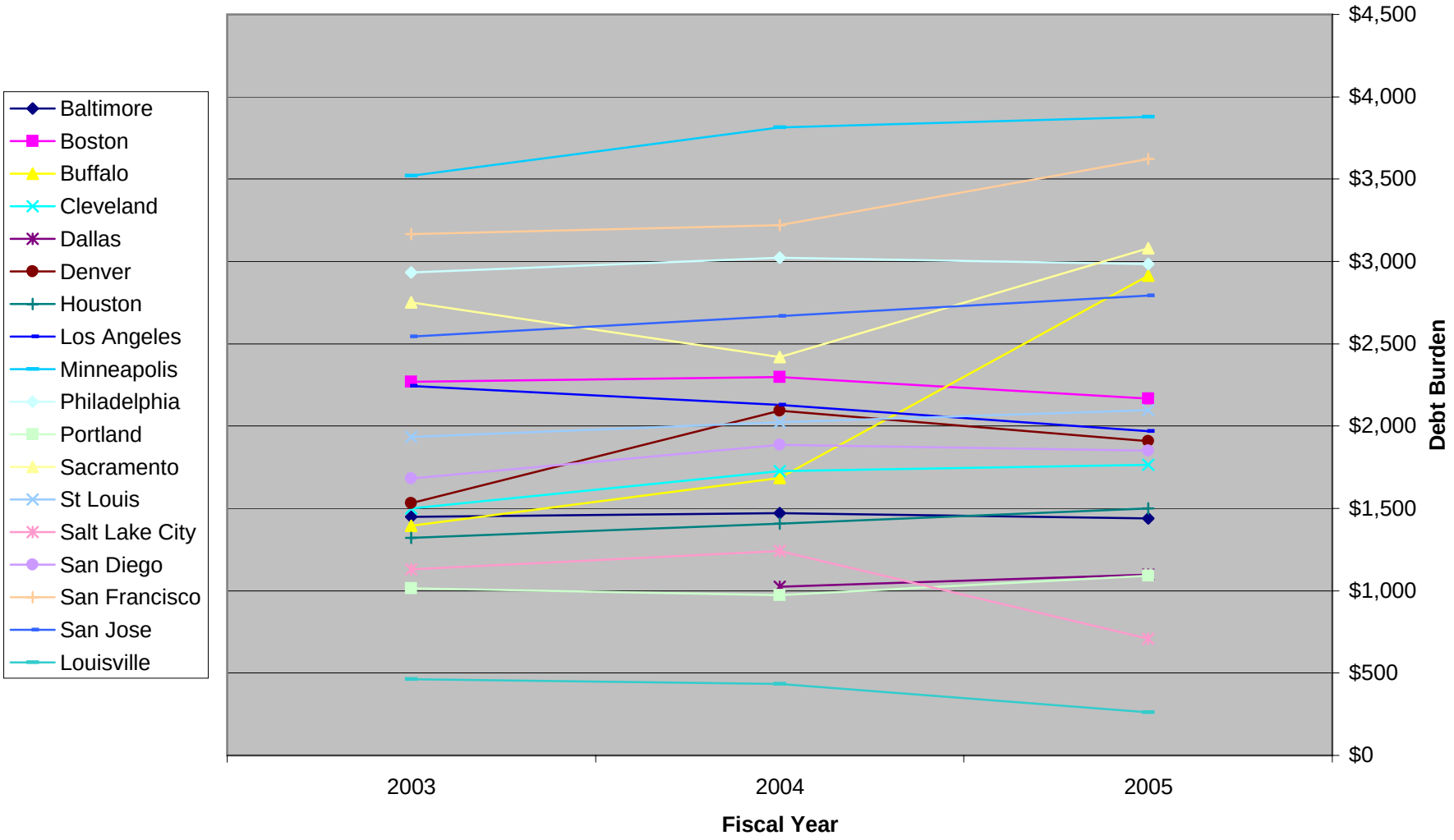
Current Ratio
(GO Bonds + Other Liability Debt)



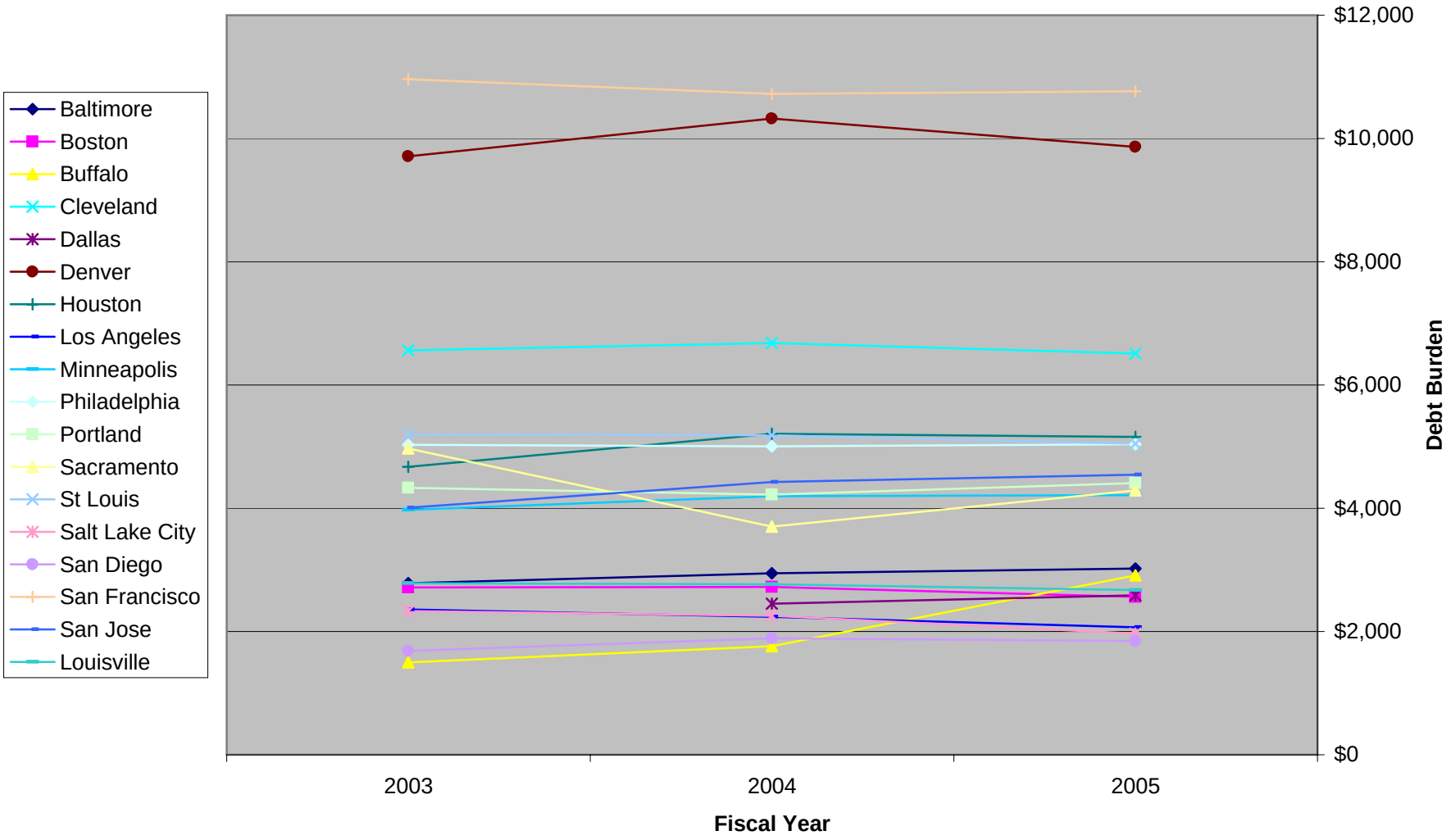
Current Ratio
(Total Debt)



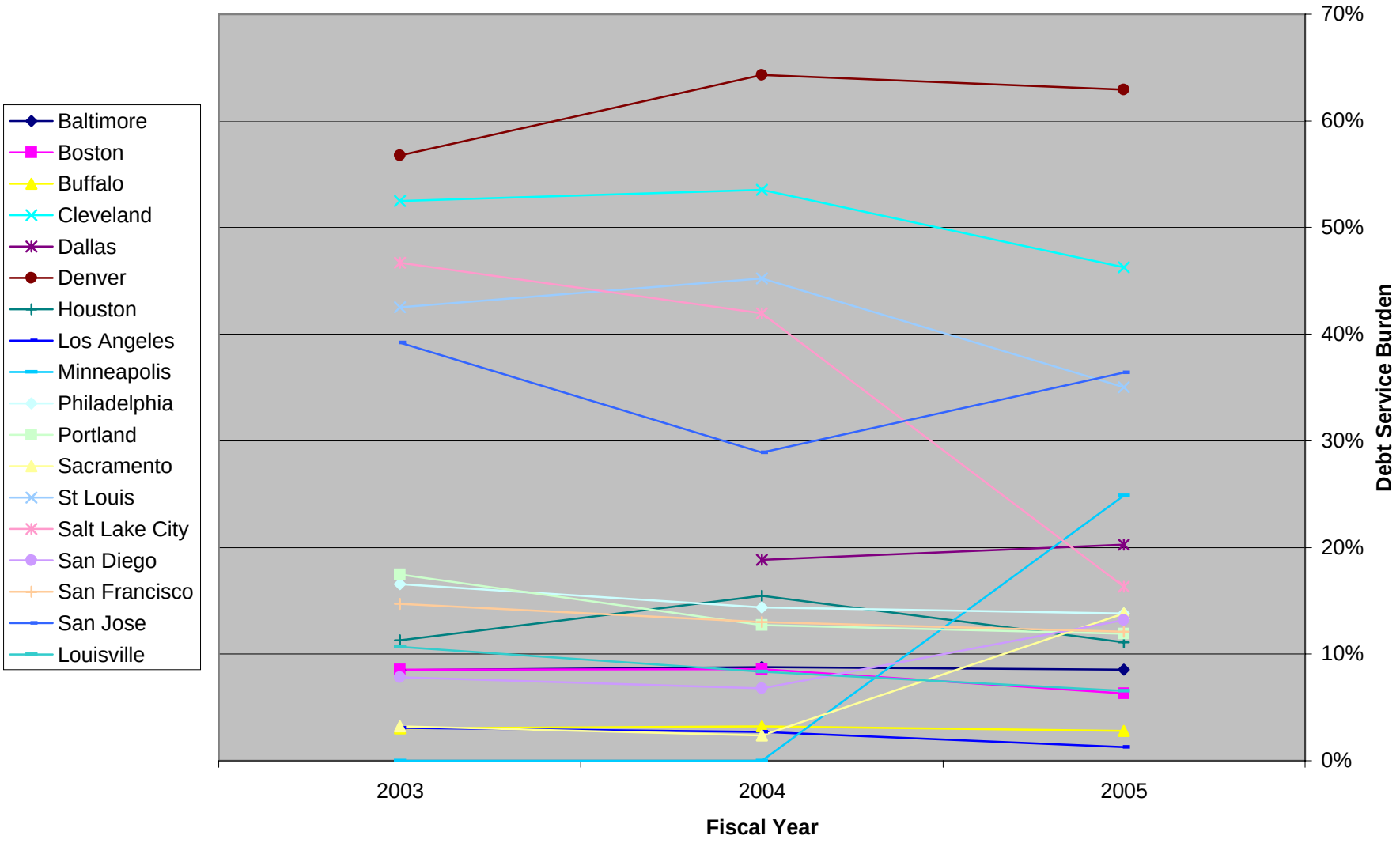
Debt Burden: GO Bonds + Other Liability Debt
(2005 constant dollars)

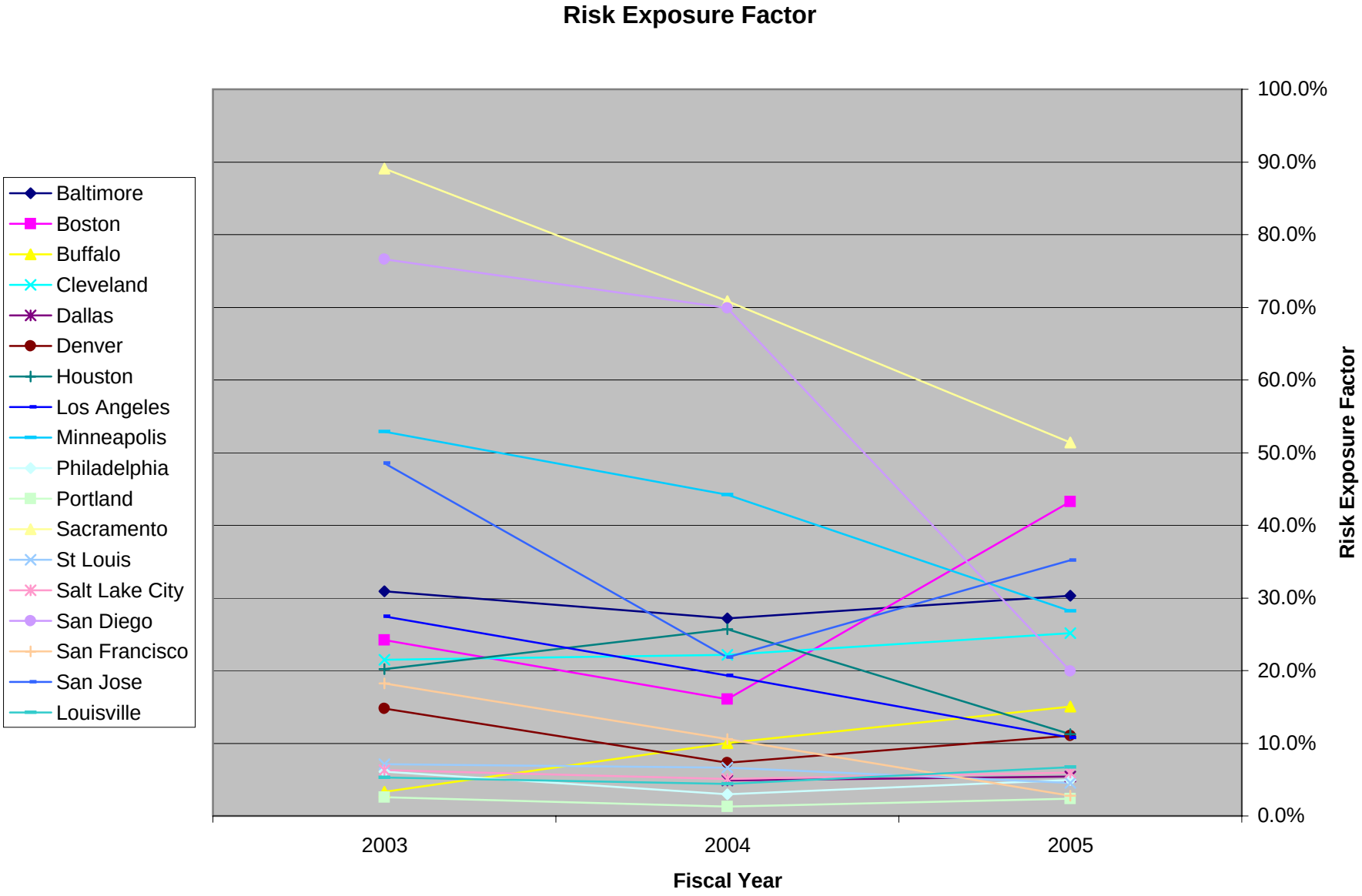


Debt Burden: Total Debt
(2005 constant dollars)

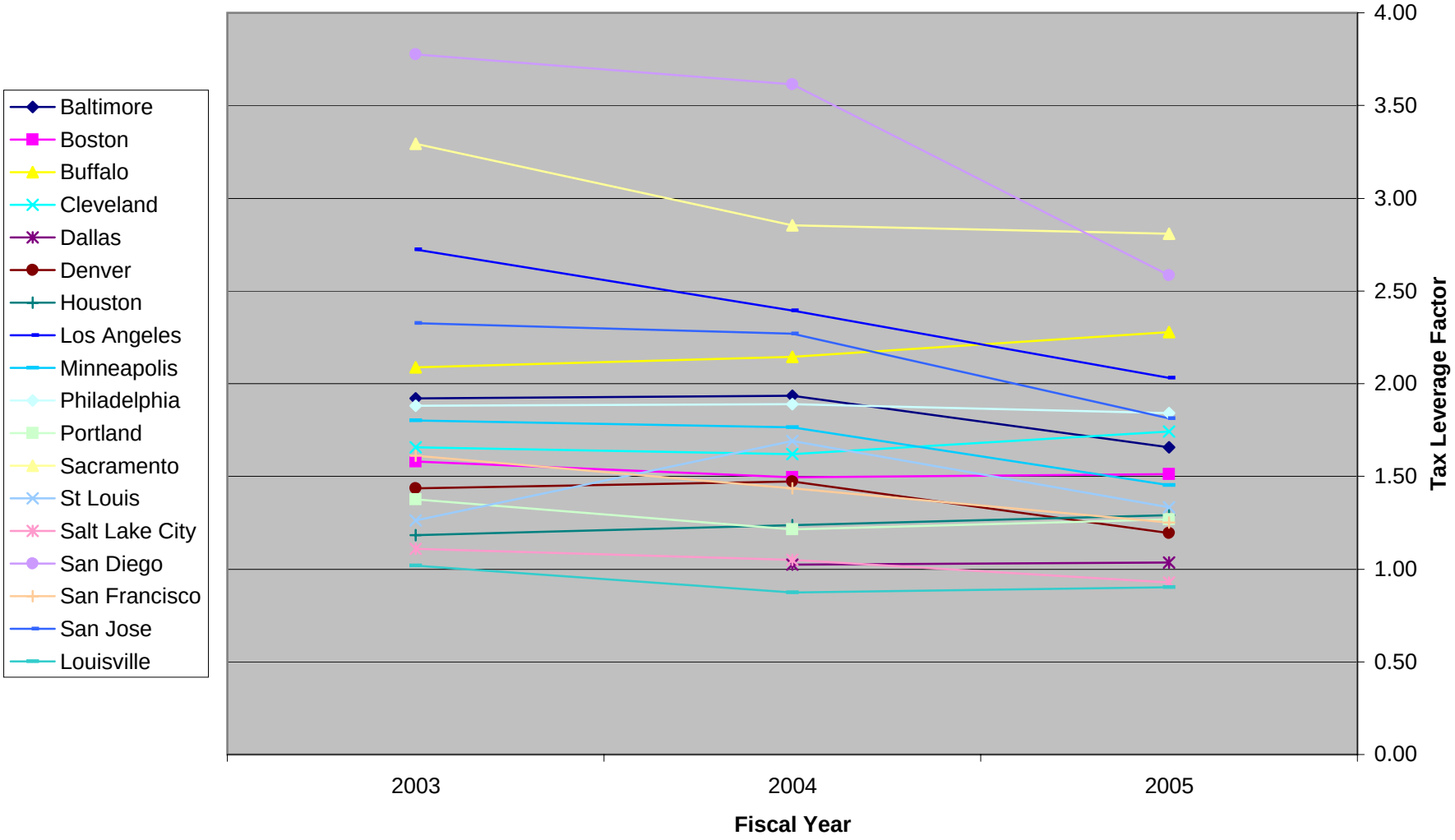


Debt Service Burden

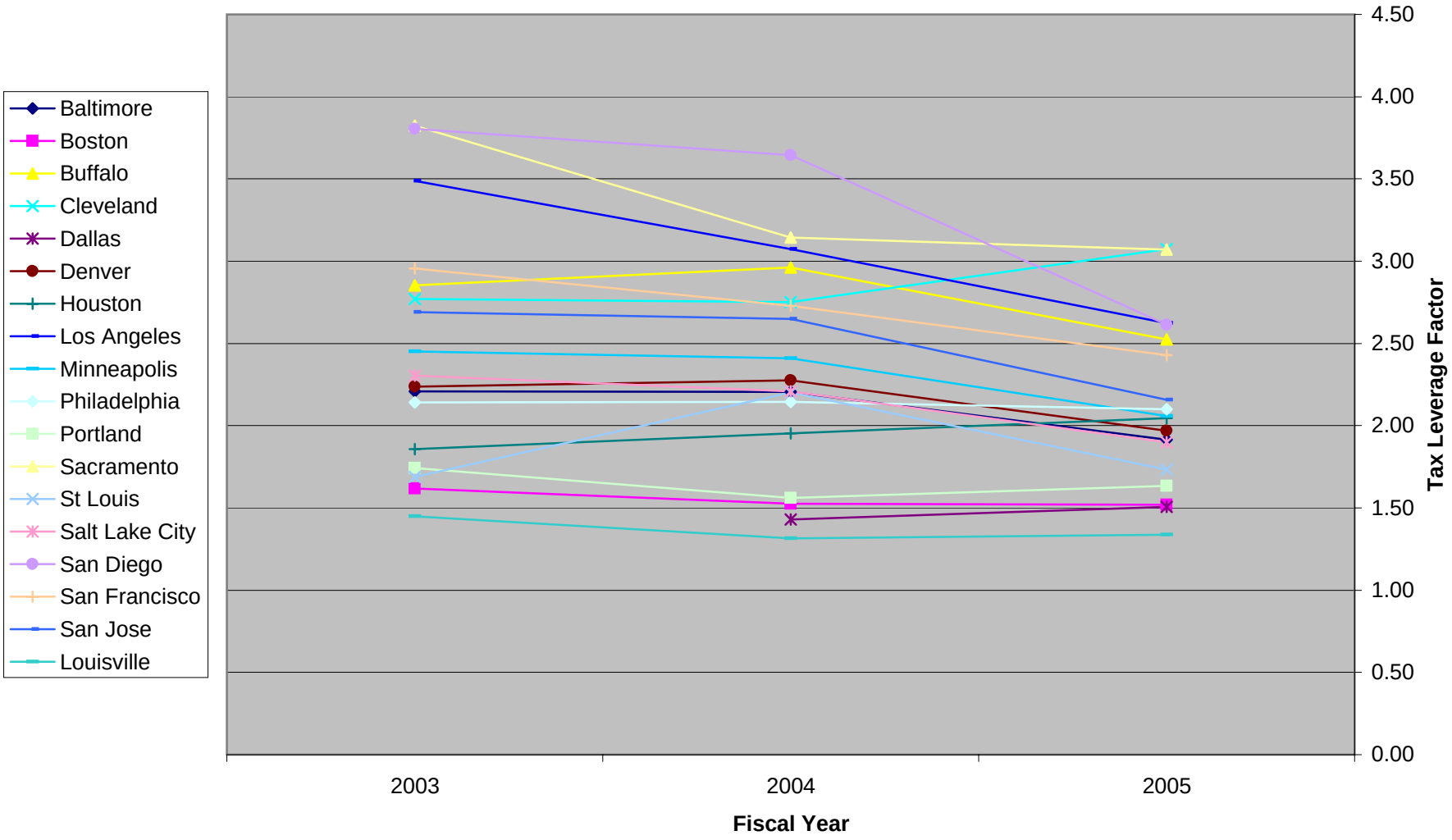



Risk Exposure Factor
Baltimore
Boston
Buffalo
Cleveland
Dallas
Denver
Houston
Los Angeles
Minneapolis
Philadelphia
Portland
Sacramento
St Louis
Salt Lake City
San Diego
San Francisco
San Jose
Louisville
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
Risk Exposure Factor
2003
2004
2005
Fiscal Year

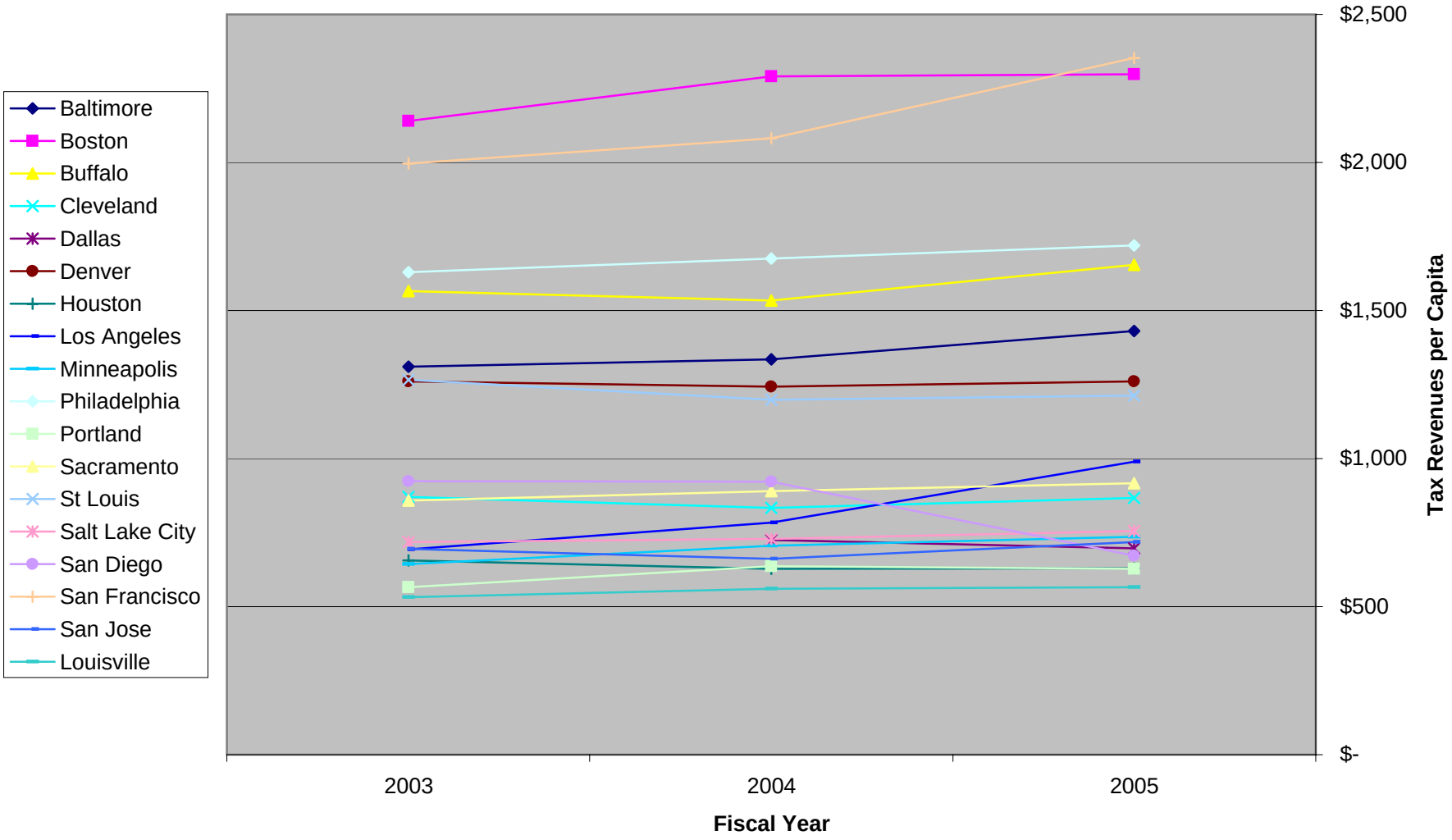
Tax Leverage Factor
(Governmental Activities)



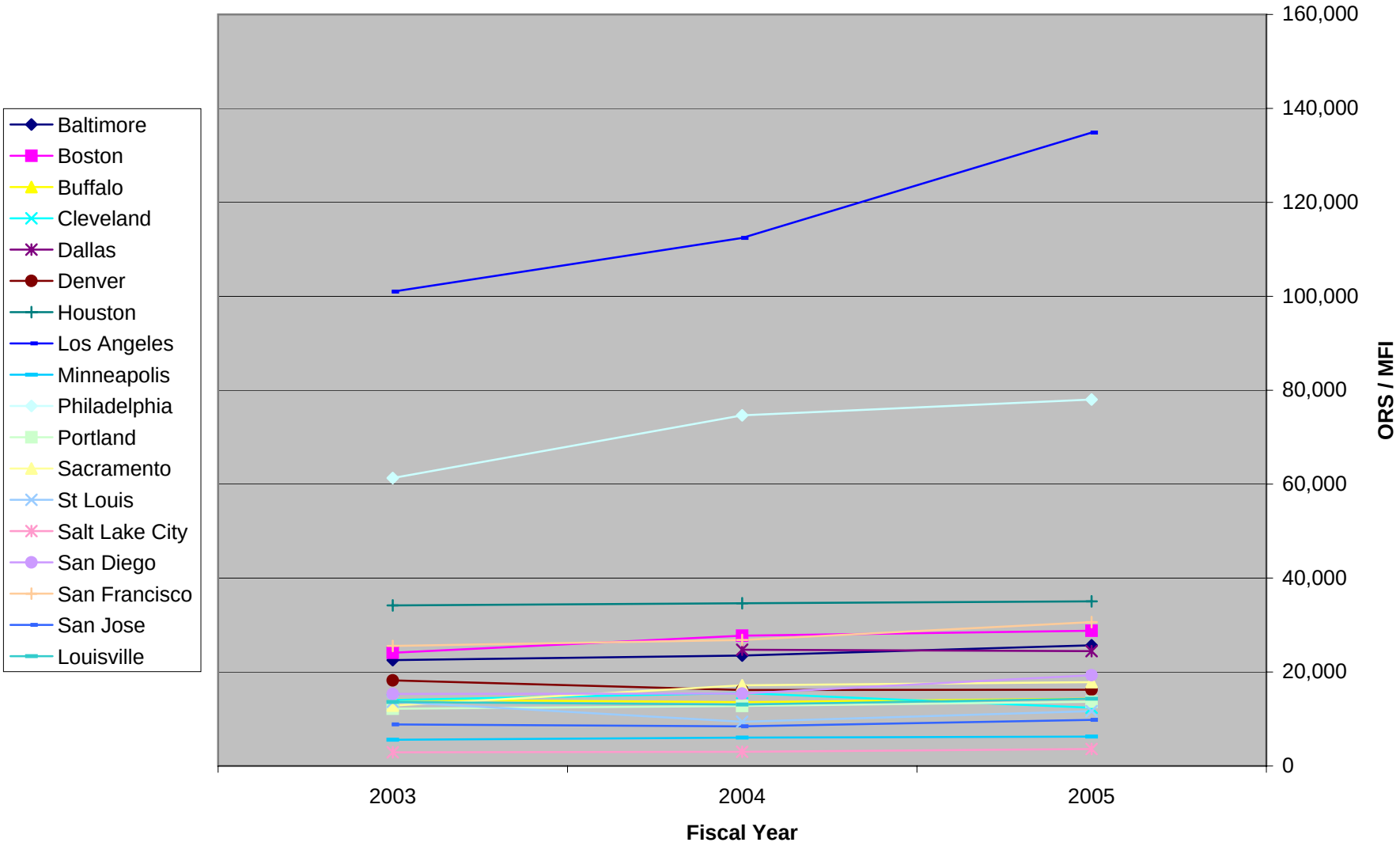
Tax Leverage Factor
(Total)



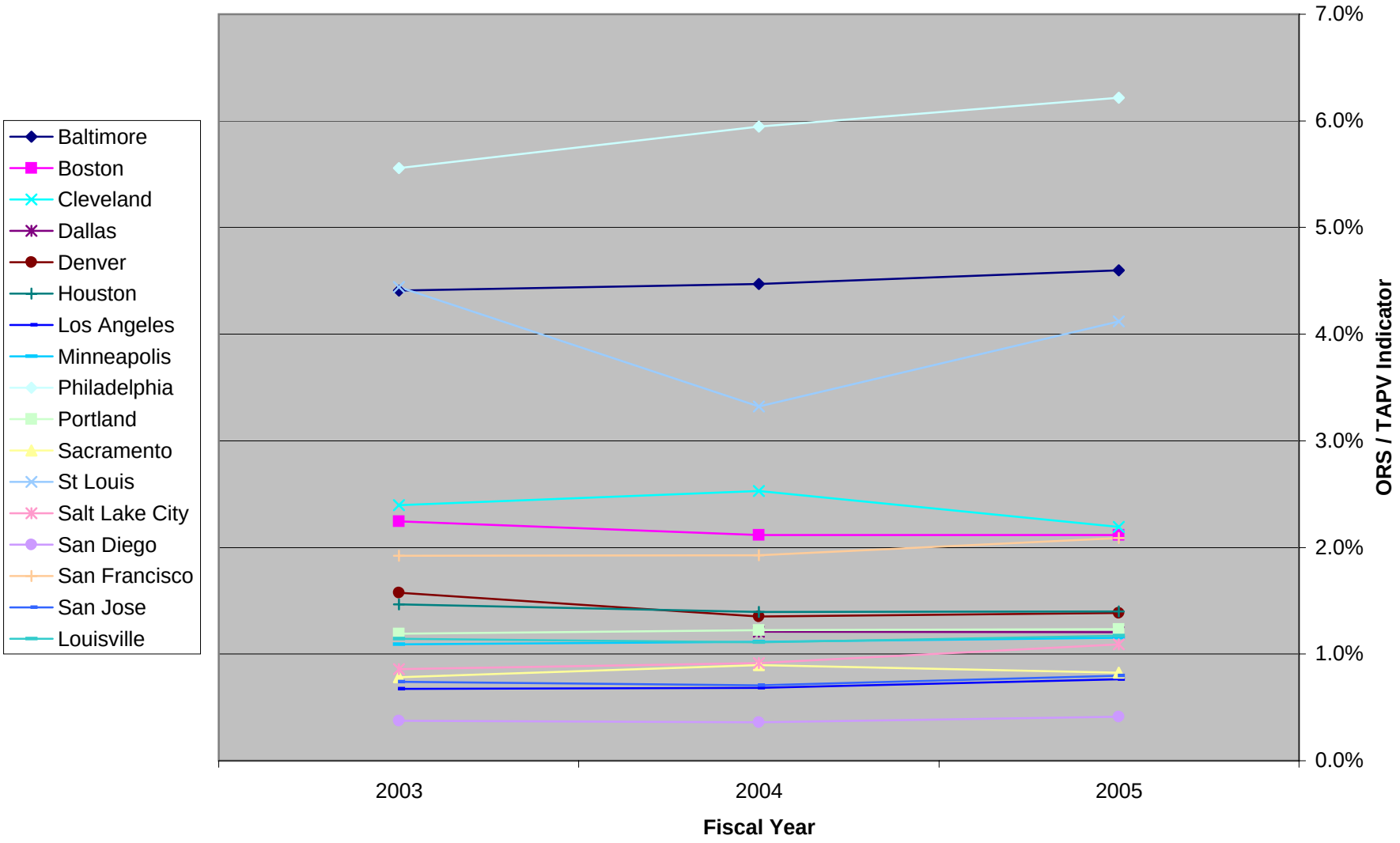
Tax Revenues per Capita
(2005 constant dollars)

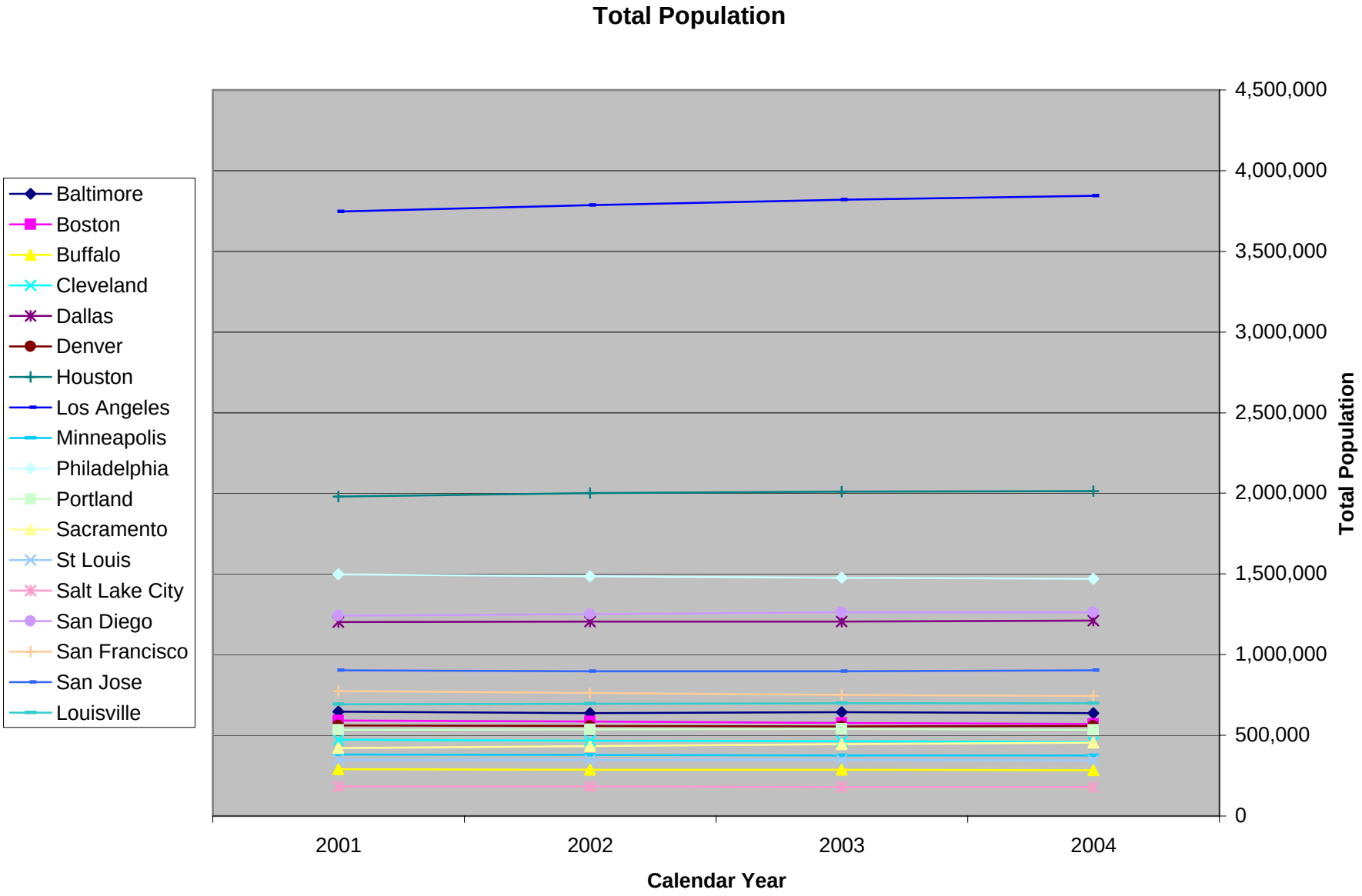


Own Revenue Sources / Median Family Income

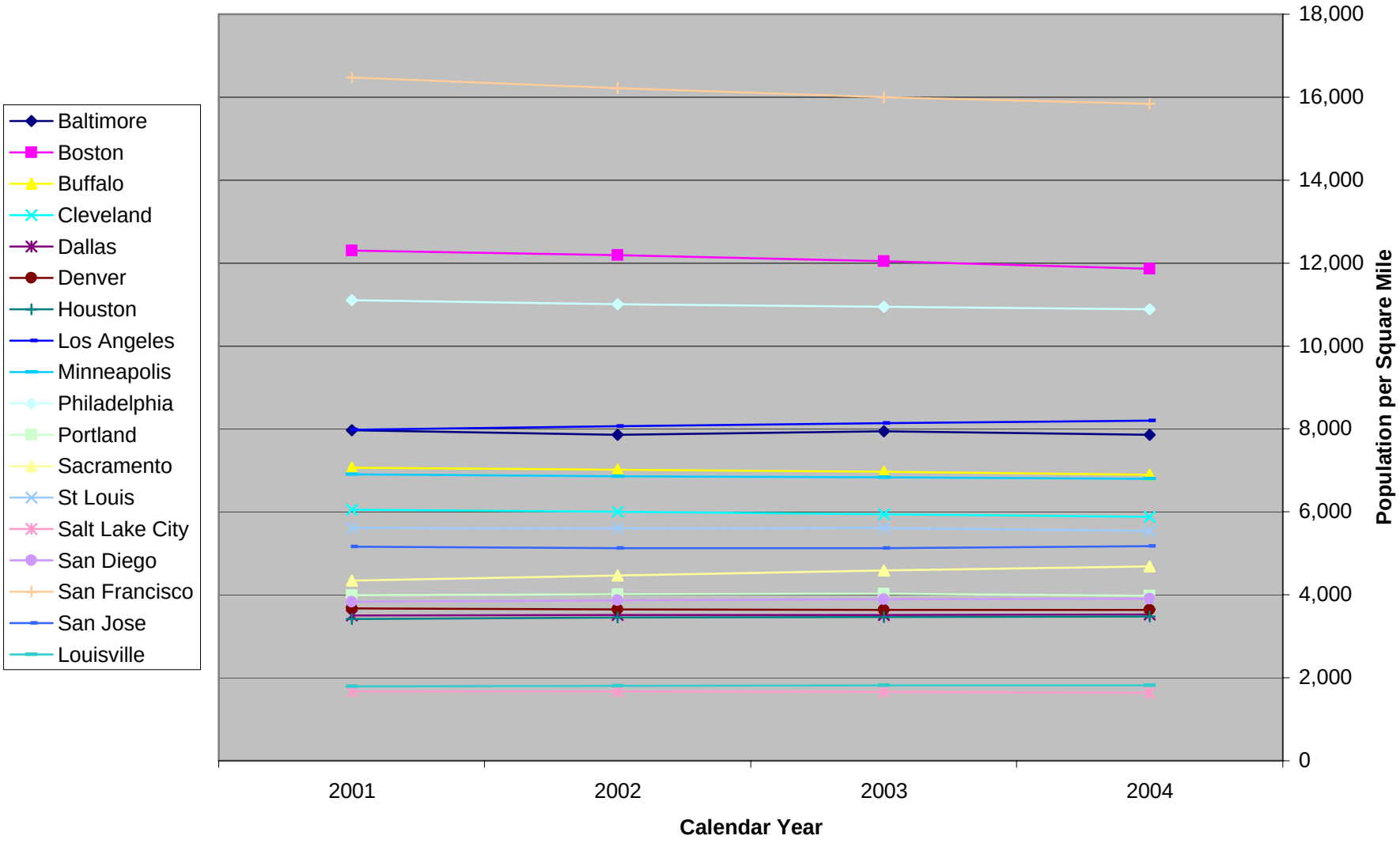


Own Revenues Sources / Total Appraised Property Value

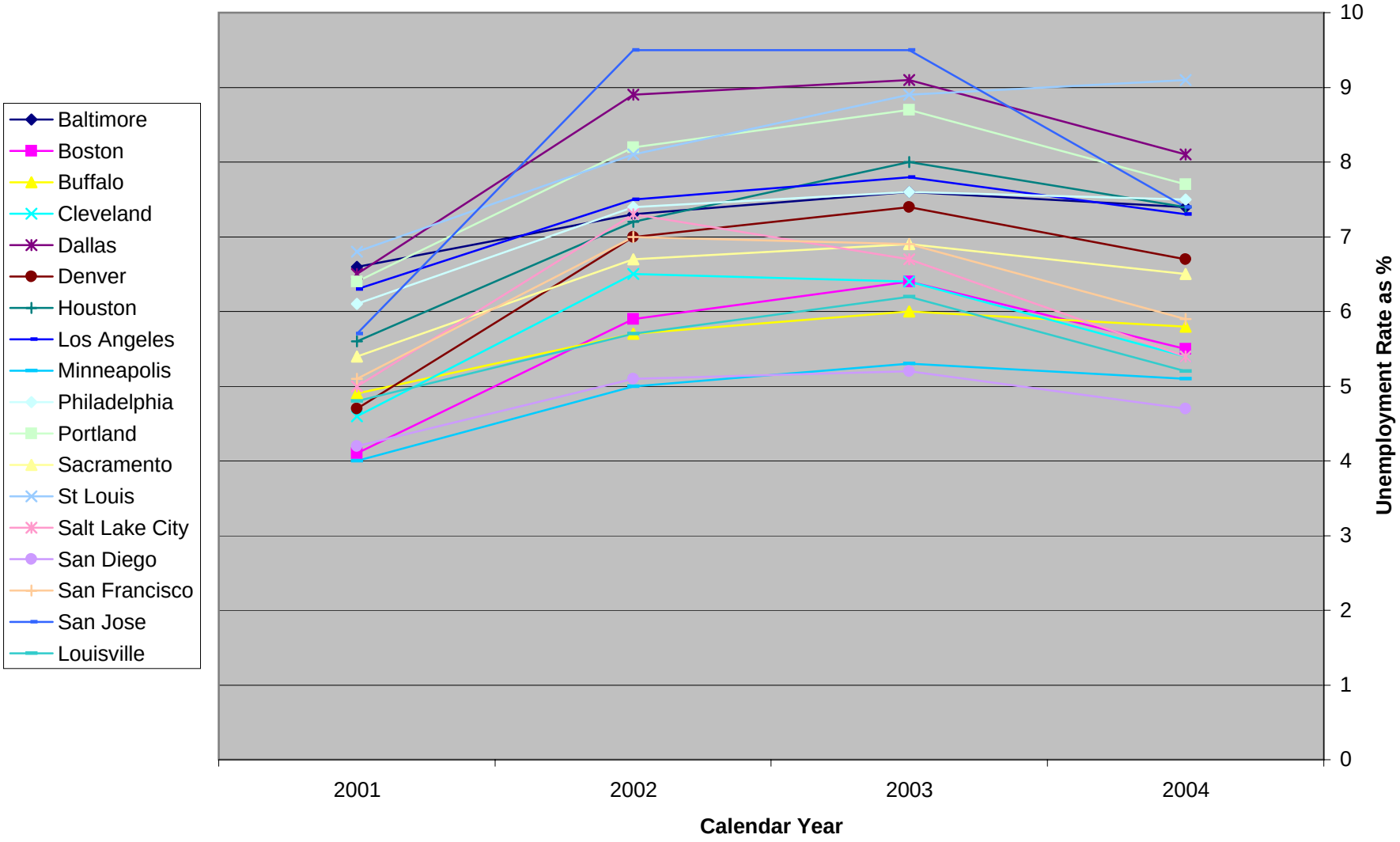



Total Population
Baltimore
Boston
Buffalo
Cleveland
Dallas
Denver
Houston
Los Angeles
Minneapolis
Philadelphia
Portland
Sacramento
St Louis
Salt Lake City
San Diego
San Francisco
San Jose
Louisville
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
Total Population
2001
2002
2003
2004
Calendar Year

Population Density



Unemployment Rate



Appendix D

Transit Organization Types			
City	*State*	*Transit Organization*	*Agency & Institution Type Descriptions (first/second lines)*
Baltimore	MD	Maryland Transit Administration	1. State Department of Transportation
			2. Unit of State Government
Boston	MA	Massachusetts Bay Transportation Authority	1. Public agency or authority that contracts for some or all transit service
			2. Independent Agency with an appointed Board of Directors
Buffalo	NY	Niagara Frontier Transportation Authority	1. Public agency or authority that directly operates all transit service
			2. Independent Agency with an appointed Board of Directors
Cleveland	OH	The Greater Cleveland Regional Transit Authority	1. Public agency or authority that contracts for some or all transit service
			2. Independent Agency with an appointed Board of Directors
Dallas	TX	Dallas Area Rapid Transit	1. Public agency or authority that contracts for some or all transit service
			2. Independent Agency with an appointed Board of Directors
Denver	CO	Denver Regional Transportation District	1. Public agency or authority that contracts for some or all transit service
			2. Unit of State Government
Houston	TX	Metropolitan Transit Authority of Harris County, Texas	1. Public agency or authority that contracts for some or all transit service
			2. Independent Agency with an appointed Board of Directors
Los Angeles	CA	Los Angeles County Metropolitan Transportation Authority	1. Public agency or authority that contracts for some or all transit service
			2. Independent Agency with an appointed Board of Directors
Louisville	KY	Transit Authority of River City	1. Public agency or authority that contracts for some or all transit service
			2. Independent Agency with an appointed Board of Directors
Minneapolis	MN	Metro Transit	1. Public agency or authority that contracts for some or all transit service
			2. Subsidiary Operating Unit of Regional Agency
Philadelphia	PA	Southeastern Pennsylvania Transportation Authority	1. Public agency or authority that contracts for some or all transit service
			2. Independent Agency with an appointed Board of Directors
Portland	OR	Tri-County Metropolitan Transportation District of Oregon	1. Public agency or authority that contracts for some or all transit service
			2. Independent Agency with an appointed Board of Directors
Sacramento	CA	Sacramento Regional Transit District	1. Public agency or authority that contracts for some or all transit service
			2. Independent Agency with an appointed Board of Directors
Salt Lake City	UT	Utah Transit Authority	1. Public agency or authority that contracts for some or all transit service
			2. Independent Agency with an appointed Board of Directors
San Diego	CA	San Diego Trolley, Inc.	1. Public agency or authority that directly operates all transit service
			2. Subsidiary Operating Unit of Regional Agency
San Francisco	CA	San Francisco Municipal Railway	1. Public agency or authority that contracts for some or all transit service
			2. Unit of County Government
San Jose	CA	Santa Clara Valley Transportation Authority	1. Public agency or authority that contracts for some or all transit service
			2. Independent Agency with an appointed Board of Directors
St. Louis	MO	Bi-State Development Agency	1. Public agency or authority that directly operates all transit service
			2. Independent Agency with an appointed Board of Directors

* Source: Federal Transit Administration (FTA) - National Transit Database

Appendix E

Table 1

Transit Expenditures 2004 National Transit Database	Boston Massachusetts Bay Transportation Authority	Buffalo Niagara Falls Transportation Authority	Dallas Dallas Area Rapid Transit	Denver Regional Transportation District
Operating Expenses	$ 107,081,950	$ 18,271,154	$ 57,023,065	$ 21,689,060
Fare Revenues	$ 52,704,769	$ 3,925,653	$ 8,760,375	$ 8,050,707
User Charge Coverage (recovery ratio)	49.2%	21.5%	15.4%	37.1%
Directional Route Miles	51.0	12.4	87.7	31.6
Annual Unlinked Trips (passenger boardings)	70,558,126	5,478,002	16,375,995	10,028,459
Operating Expense / Directional Route Miles	$ 2,099,646	$ 1,473,480	$ 650,206	$ 686,363
Operating Expense / Annual Unlinked Trips	$ 1.52	$ 3.34	$ 3.48	$ 2.16
*Sources of Operating Funds				
Local fund percentage	12%	36%	0%	61%
State funds percentage	55%	29%	66%	0%
Operating expenses from local funds	$ 12,849,834	$ 6,577,615	$ -	$ 13,230,327
Operating expenses from state funds	$ 58,895,073	$ 5,298,635	$ 37,635,223	$ -
Capital Expenses (regular #)	$ 85,383,200	$ 6,123,886	$ 96,541,644	$ 205,997,532
*Sources of Capital Funds				
Local funds percentage	64%	32%	1%	75%
State funds percentage	2%	17%	65%	0%
Capital expenses from local funds	$ 54,645,248	$ 1,959,644	$ 965,416	$ 154,498,149
Capital expenses from state funds	$ 1,707,664	$ 1,041,061	$ 62,752,069	$ -

~Light-rail component of each individual Transit Authority (no buses, airports, etc.)

Table 2

Transit Expenditures 2004 National Transit Database	Houston Metropolitan Transit Authority of Harris County	Portland Tri-County Metropolitan Transportation District	Saint Louis Bi-State Development Agency	Median Transit Statistic
Operating Expenses	$ 14,134,691	$ 56,965,750	$ 36,293,685	$ 36,293,685
Fare Revenues	$ 1,486,925	$ 19,822,219	$ 9,376,280	$ 8,760,375
User Charge Coverage (recovery ratio)	10.5%	34.8%	25.8%	24.1%
Directional Route Miles	14.8	92.9	75.8	51.0
Annual Unlinked Trips (passenger boardings)	5,349,726	31,516,208	14,509,522	14,509,522
Operating Expense / Directional Route Miles	$ 955,047	$ 613,194	$ 478,809	$ 711,641
Operating Expense / Annual Unlinked Trips	$ 2.64	$ 1.81	$ 2.50	$ 2.50
*Sources of Operating Funds				
Local fund percentage	66%	57%	68%	57%
State funds percentage	1%	1%	1%	1%
Operating expenses from local funds	$ 9,328,896	$ 32,470,478	$ 24,679,706	$ 20,687,400
Operating expenses from state funds	$ 141,347	$ 569,658	$ 362,937	$ 362,937
Capital Expenses (regular #)	$ 81,744,492	$ 72,894,711	$ 215,021,719	$ 85,383,200
*Sources of Capital Funds				
Local funds percentage	66%	42%	84%	64%
State funds percentage	1%	0%	1%	1%
Capital expenses from local funds	$ 53,951,365	$ 30,615,779	$ 180,618,244	$ 54,645,248
Capital expenses from state funds	$ 817,445	$ -	$ 2,150,217	$ 853,832

~Light-rail component of each individual Transit Authority (no buses, airports, etc.)

Appendix F

Table 1: Assume a 30-year bond issue with a 4.54% municipal yield*
Model -Even annual principal with declining debt service

End of Year	Annual Principal	Annual Interest	Annual Debt Service	Debt outstanding at end of year
1	$ 15,266,133	$ 20,792,474	$ 36,058,607	$ 442,717,867
2	$ 15,266,133	$ 20,099,391	$ 35,365,524	$ 427,451,733
3	$ 15,266,133	$ 19,406,309	$ 34,672,442	$ 412,185,600
4	$ 15,266,133	$ 18,713,226	$ 33,979,360	$ 396,919,467
5	$ 15,266,133	$ 18,020,144	$ 33,286,277	$ 381,653,333
6	$ 15,266,133	$ 17,327,061	$ 32,593,195	$ 366,387,200
7	$ 15,266,133	$ 16,633,979	$ 31,900,112	$ 351,121,067
8	$ 15,266,133	$ 15,940,896	$ 31,207,030	$ 335,854,933
9	$ 15,266,133	$ 15,247,814	$ 30,513,947	$ 320,588,800
10	$ 15,266,133	$ 14,554,732	$ 29,820,865	$ 305,322,667
11	$ 15,266,133	$ 13,861,649	$ 29,127,782	$ 290,056,533
12	$ 15,266,133	$ 13,168,567	$ 28,434,700	$ 274,790,400
13	$ 15,266,133	$ 12,475,484	$ 27,741,617	$ 259,524,267
14	$ 15,266,133	$ 11,782,402	$ 27,048,535	$ 244,258,133
15	$ 15,266,133	$ 11,089,319	$ 26,355,453	$ 228,992,000
16	$ 15,266,133	$ 10,396,237	$ 25,662,370	$ 213,725,867
17	$ 15,266,133	$ 9,703,154	$ 24,969,288	$ 198,459,733
18	$ 15,266,133	$ 9,010,072	$ 24,276,205	$ 183,193,600
19	$ 15,266,133	$ 8,316,989	$ 23,583,123	$ 167,927,467
20	$ 15,266,133	$ 7,623,907	$ 22,890,040	$ 152,661,333
21	$ 15,266,133	$ 6,930,825	$ 22,196,958	$ 137,395,200
22	$ 15,266,133	$ 6,237,742	$ 21,503,875	$ 122,129,067
23	$ 15,266,133	$ 5,544,660	$ 20,810,793	$ 106,862,933
24	$ 15,266,133	$ 4,851,577	$ 20,117,711	$ 91,596,800
25	$ 15,266,133	$ 4,158,495	$ 19,424,628	$ 76,330,667
26	$ 15,266,133	$ 3,465,412	$ 18,731,546	$ 61,064,533
27	$ 15,266,133	$ 2,772,330	$ 18,038,463	$ 45,798,400
28	$ 15,266,133	$ 2,079,247	$ 17,345,381	$ 30,532,267
29	$ 15,266,133	$ 1,386,165	$ 16,652,298	$ 15,266,133
30	$ 15,266,133	$ 693,082	$ 15,959,216	$ 0
Totals	$ 457,984,000	$ 322,283,341	$ 780,267,341	

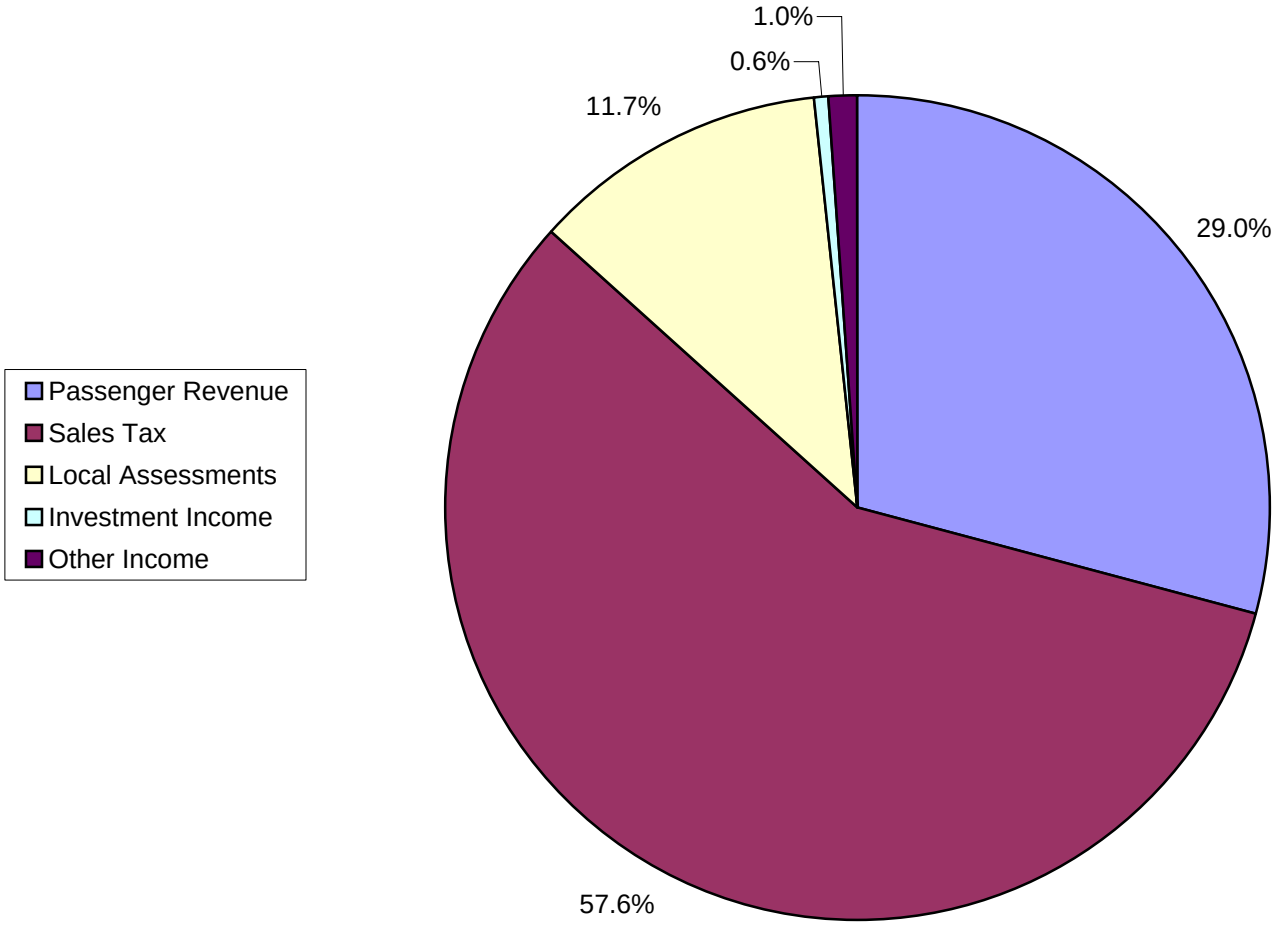
Table 2: Assume a 30-year bond issue with a 4.54% municipal yield*
Model -Even annual principal with declining debt service

End of Year	Annual Principal	Annual Interest	Annual Debt Service	Debt outstanding at end of year
1	$ 10,341,667	$ 14,085,350	$ 24,427,017	$ 299,908,333
2	$ 10,341,667	$ 13,615,838	$ 23,957,505	$ 289,566,667
3	$ 10,341,667	$ 13,146,327	$ 23,487,993	$ 279,225,000
4	$ 10,341,667	$ 12,676,815	$ 23,018,482	$ 268,883,333
5	$ 10,341,667	$ 12,207,303	$ 22,548,970	$ 258,541,667
6	$ 10,341,667	$ 11,737,792	$ 22,079,458	$ 248,200,000
7	$ 10,341,667	$ 11,268,280	$ 21,609,947	$ 237,858,333
8	$ 10,341,667	$ 10,798,768	$ 21,140,435	$ 227,516,667
9	$ 10,341,667	$ 10,329,257	$ 20,670,923	$ 217,175,000
10	$ 10,341,667	$ 9,859,745	$ 20,201,412	$ 206,833,333
11	$ 10,341,667	$ 9,390,233	$ 19,731,900	$ 196,491,667
12	$ 10,341,667	$ 8,920,722	$ 19,262,388	$ 186,150,000
13	$ 10,341,667	$ 8,451,210	$ 18,792,877	$ 175,808,333
14	$ 10,341,667	$ 7,981,698	$ 18,323,365	$ 165,466,667
15	$ 10,341,667	$ 7,512,187	$ 17,853,853	$ 155,125,000
16	$ 10,341,667	$ 7,042,675	$ 17,384,342	$ 144,783,333
17	$ 10,341,667	$ 6,573,163	$ 16,914,830	$ 134,441,667
18	$ 10,341,667	$ 6,103,652	$ 16,445,318	$ 124,100,000
19	$ 10,341,667	$ 5,634,140	$ 15,975,807	$ 113,758,333
20	$ 10,341,667	$ 5,164,628	$ 15,506,295	$ 103,416,667
21	$ 10,341,667	$ 4,695,117	$ 15,036,783	$ 93,075,000
22	$ 10,341,667	$ 4,225,605	$ 14,567,272	$ 82,733,333
23	$ 10,341,667	$ 3,756,093	$ 14,097,760	$ 72,391,667
24	$ 10,341,667	$ 3,286,582	$ 13,628,248	$ 62,050,000
25	$ 10,341,667	$ 2,817,070	$ 13,158,737	$ 51,708,333
26	$ 10,341,667	$ 2,347,558	$ 12,689,225	$ 41,366,667
27	$ 10,341,667	$ 1,878,047	$ 12,219,713	$ 31,025,000
28	$ 10,341,667	$ 1,408,535	$ 11,750,202	$ 20,683,333
29	$ 10,341,667	$ 939,023	$ 11,280,690	$ 10,341,667
30	$ 10,341,667	$ 469,512	$ 10,811,178	$ 0
Totals	$ 310,250,000	$ 218,322,925	$ 528,572,925	

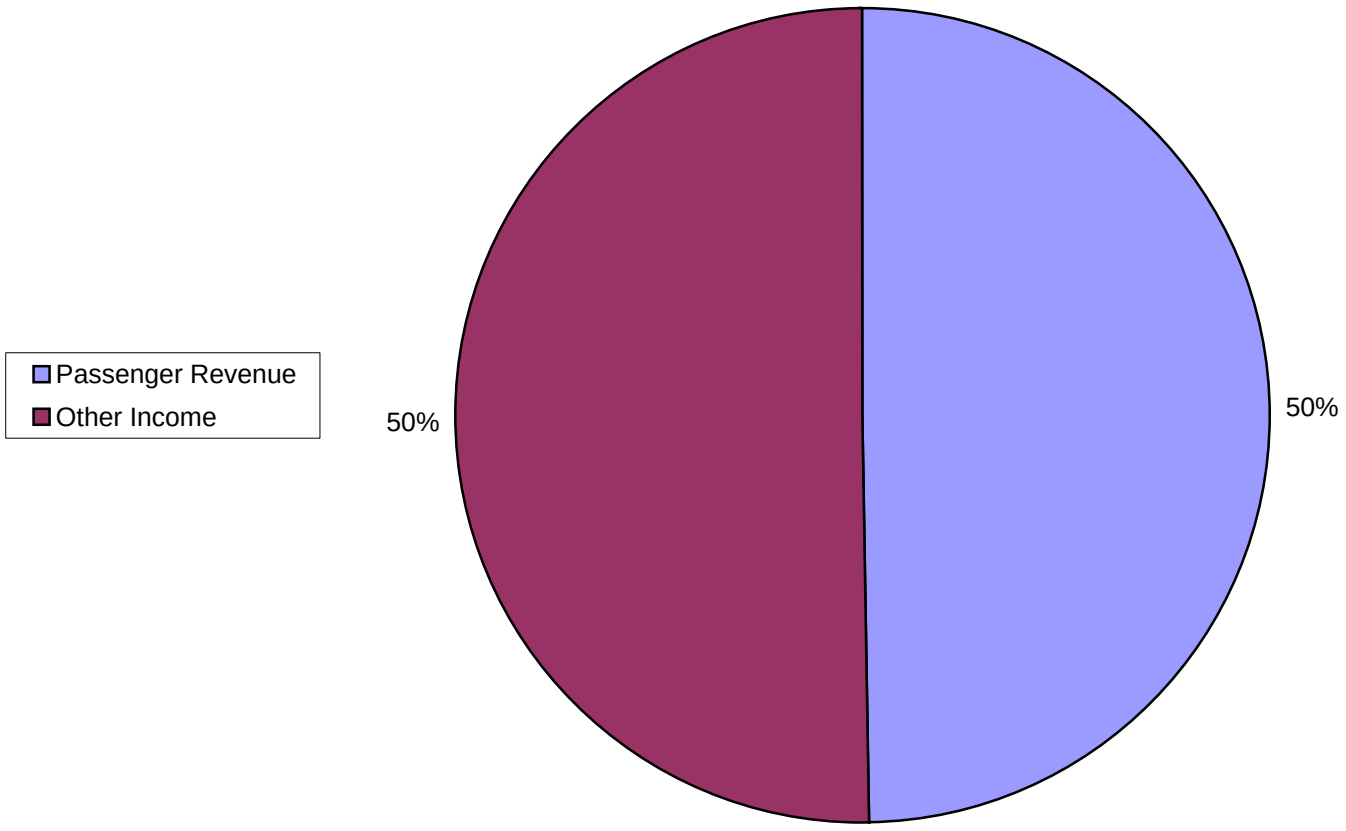
* Obtained from Bloomberg's current municipal bond yields which are triple-A rated, tax exempt insured revenue bonds (http://www.bloomberg.com/markets/rates/index.html) -March 29, 2006

Appendix G

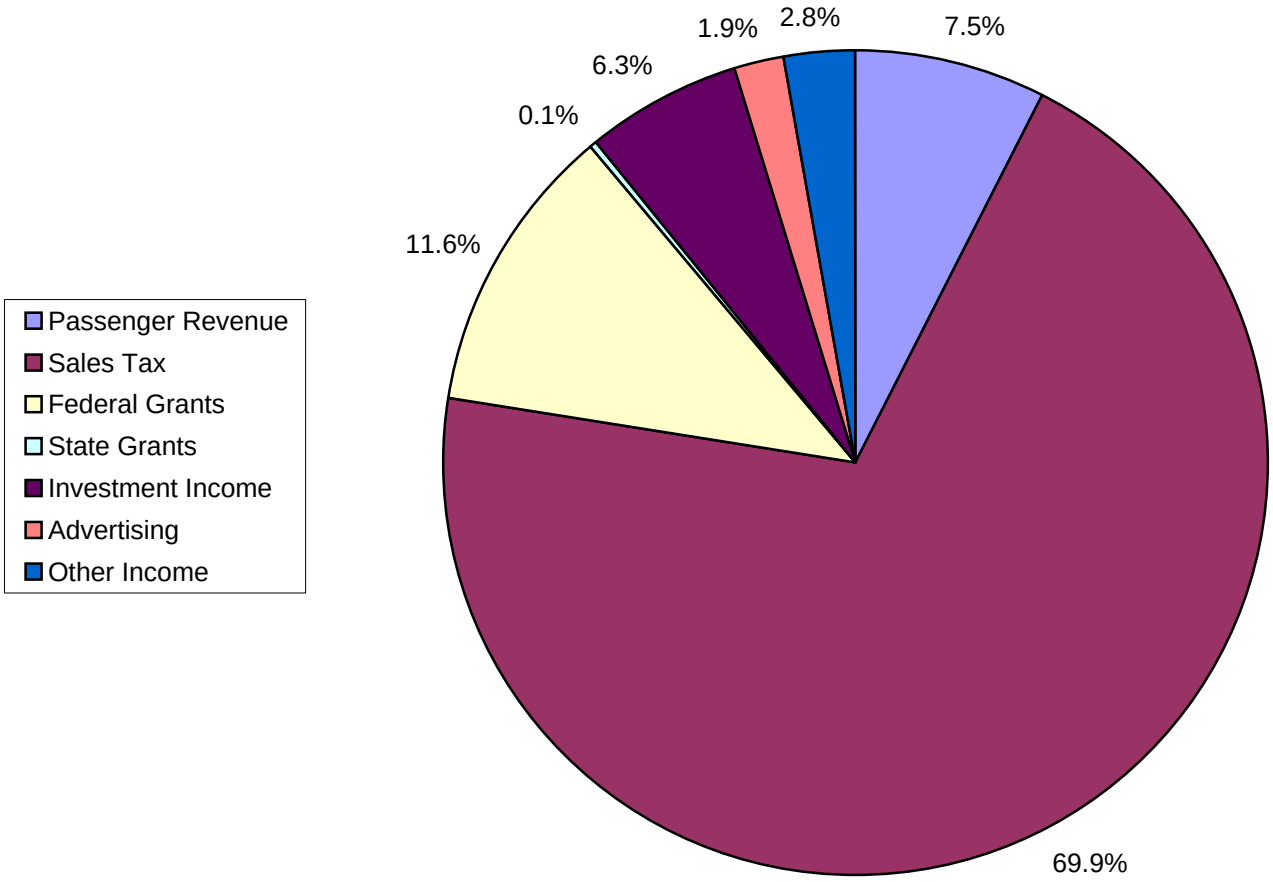
Massachusetts Bay Transportation Authority
Boston, Massachusetts



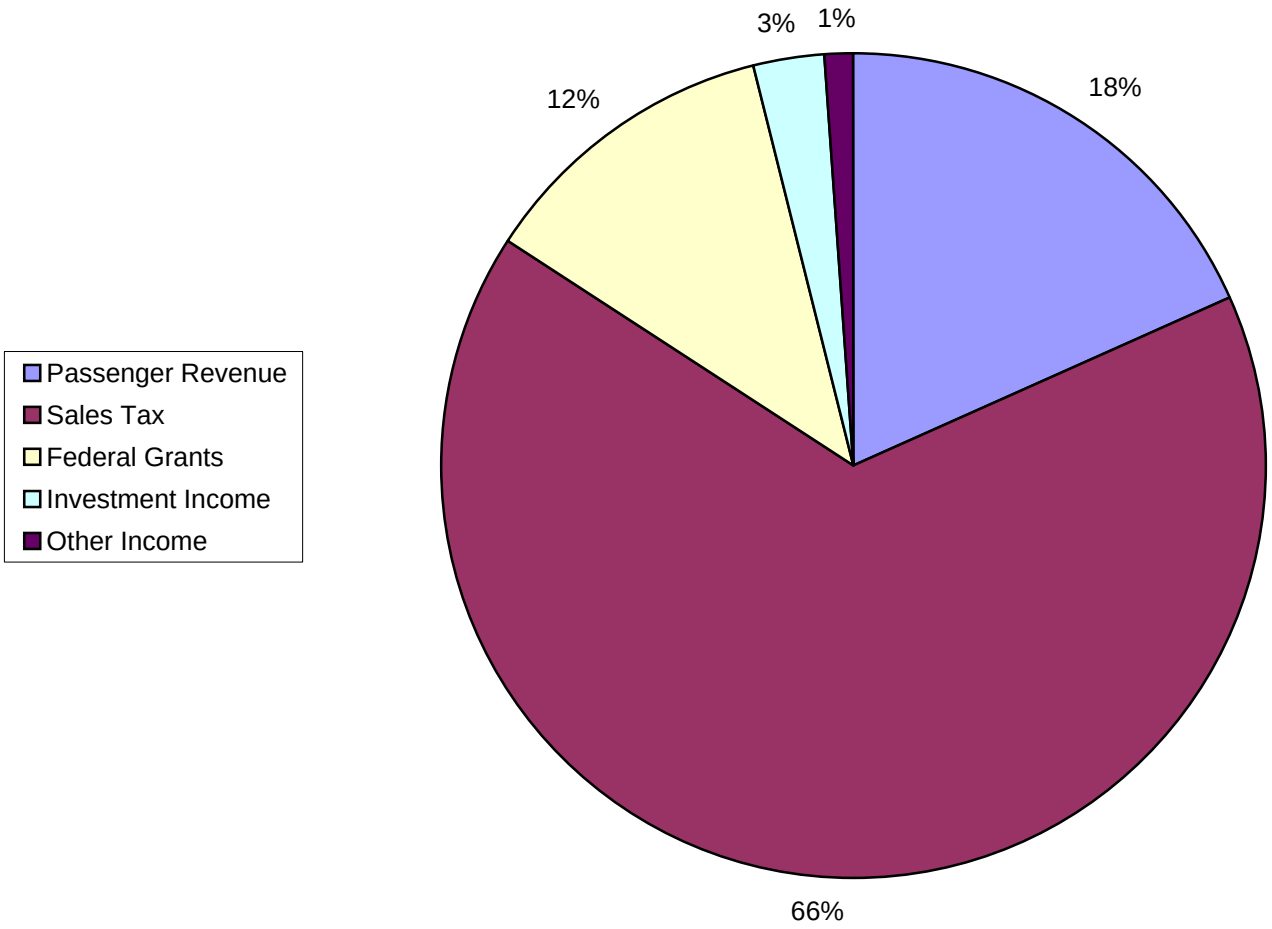
Niagara Falls Transportation Authority
Buffalo, New York



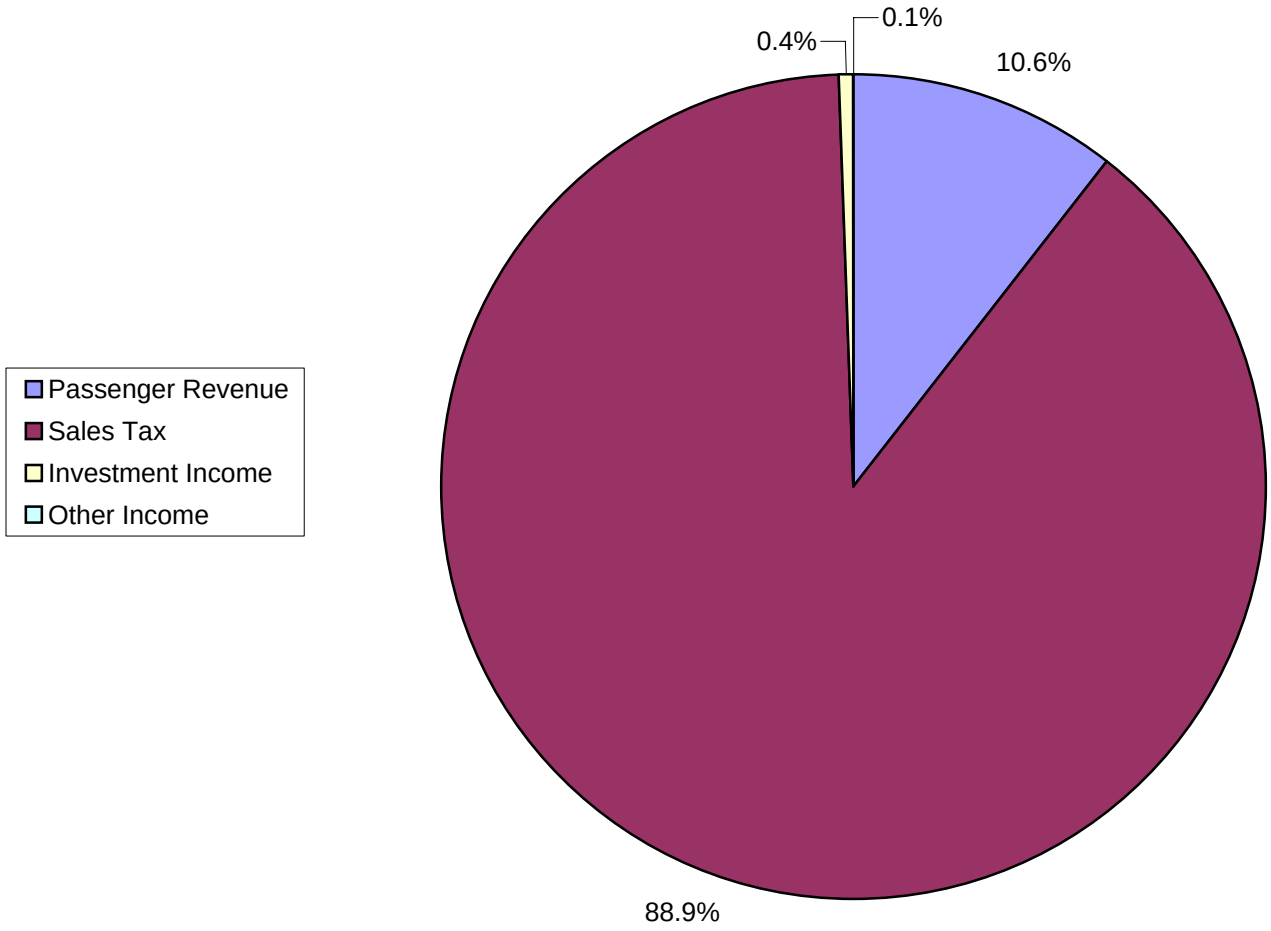
Dallas Area Rapid Transit
Dallas, Texas



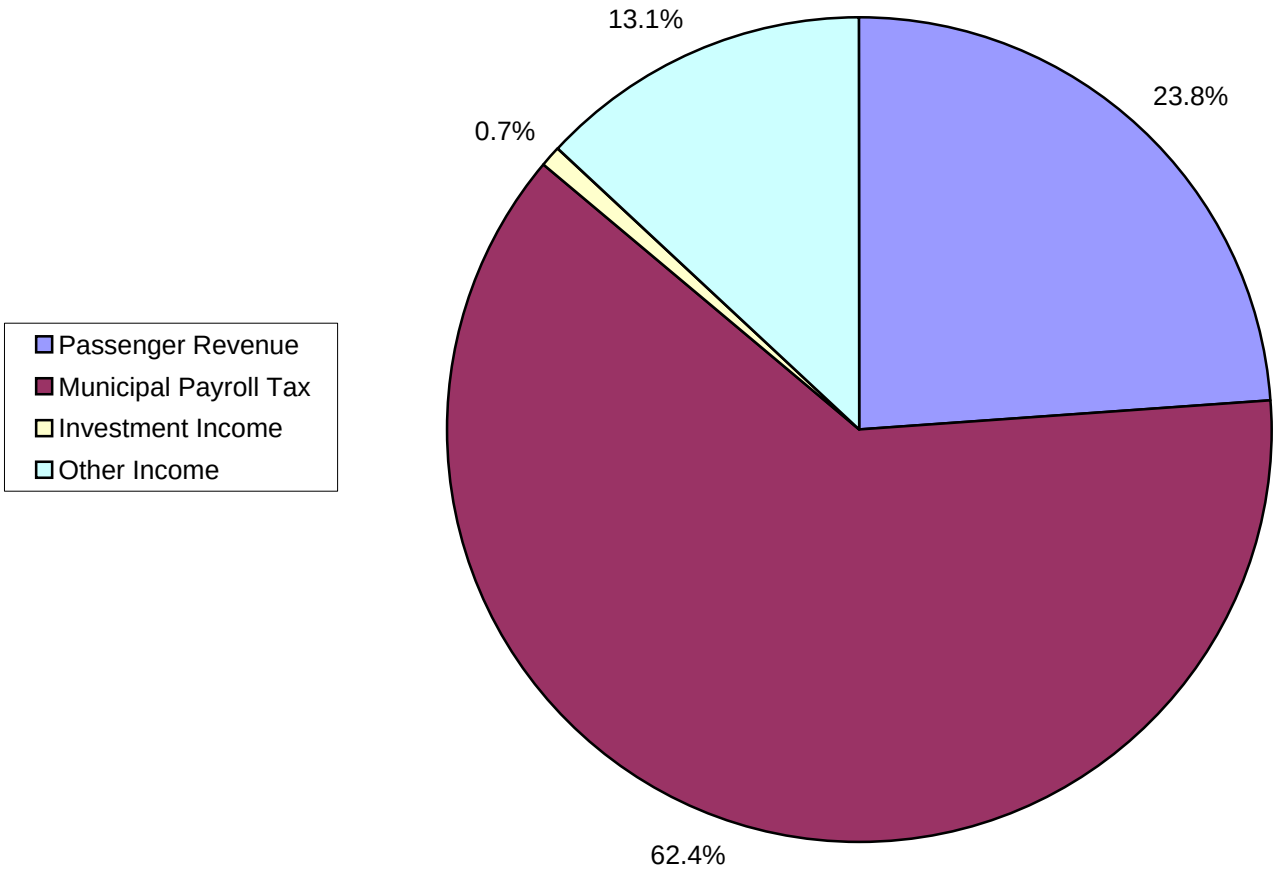
Regional Transportation District
Denver, Colorado



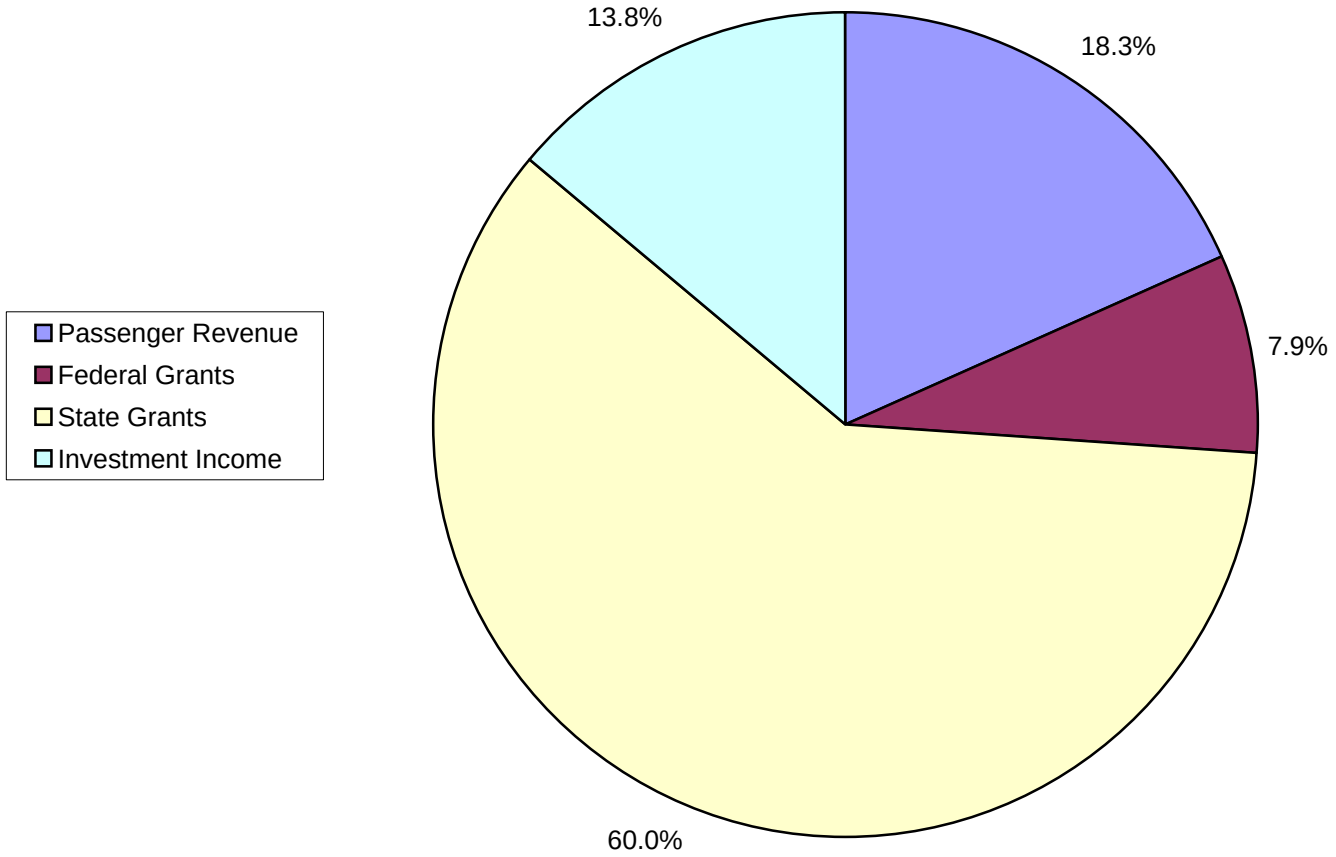
Metropolitan Transit Authority of Harris County
Houston, Texas



Tri-County Metropolitan Transportation District
Portland, Oregon



Bi-State Development Agency
St Louis, Missouri/Illinois



Appendix H

Table 1

Transit Revenues				
2004 Transit Authorities' Financial Statements	Median Transit Statistic			
	Sales Tax Option	Municipal Payroll Tax Option	Local Assessments (Property Tax) Option	Hybrid Option
Passenger Revenue	$ 55,664,000	$ 55,664,000	$ 55,664,000	$ 55,664,000
Sales Tax	$ 357,620,840	$ -	$ -	$ 357,620,840
Municipal Payroll Tax	$ -	$ 146,125,000	$ -	$ 146,125,000
Local Assessments	$ -	$ -	$ 139,437,000	$ 139,437,000
Federal Grants	$ 39,649,000	$ 39,649,000	$ 39,649,000	$ 39,649,000
State Grants	$ 57,978,138	$ 57,978,138	$ 57,978,138	$ 57,978,138
Investment Income	$ 8,323,500	$ 8,323,500	$ 8,323,500	$ 8,323,500
Advertising	$ 9,069,000	$ 9,069,000	$ 9,069,000	$ 9,069,000
Other Income	$ 12,541,500	$ 12,541,500	$ 12,541,500	$ 12,541,500

~Operating revenues analysis for overall Transit Authorities (not broken down by Light-Rail component)

~Capital revenues, grants, and contributions not included in this chart

*Passenger Revenue typically denotes fare revenue and other revenues derived from transportation