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Intrametropolitan Area Revenue Raising Disparities and Equities

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Intrametropolitan Area Revenue Raising Disparities and Equities

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Abstract

The purpose of this study is to assess the extent of variations in the revenue capacity and effort of local governments in six metropolitan areas – Baltimore, Las Vegas, Miami, Milwaukee, Richmond, and San Francisco. Our approach is to use the Representative Revenue System developed by the U.S. Advisory Commission on Intergovernmental Relations to calculate revenue capacity and effort measures for local governments within each metropolitan area. Revenue capacity is the amount of revenue a local government can potentially raise from its own sources if it applies average tax rates to each tax base, while revenue effort is what it actually does raise dependent upon revenue bases and rates.

Measures of revenue raising capacity and revenue raising effort, including indices, rankings, and disparity scores, are presented. General policy recommendations are offered based upon our analysis of revenue raising disparities relative to jurisdictional dependence on particular revenue sources, to sensitivity tests, and to city-suburban disparities or equities.

The research results reveal that there are substantial differences in revenue raising capacity and effort between jurisdictions within metropolitan areas – not only among core and suburban jurisdictions, but also among suburban jurisdictions. Additionally, per capita income is not a satisfactory substitute for per capita hypothetical capacity when determining revenue raising disparity through use of coefficients of variation. We achieved high correlation coefficients between the two alternative measures in only three of our six case studies and only when applied to the crudest of our case study analyses, that which included only counties, county equivalents, and municipalities over 25,000.

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INTRODUCTION

Regional fiscal concerns have become an increasingly visible part of both public debate and academic literature during the past decade. Despite the highly publicized case of the metropolitan wide tax base sharing policy in the Minneapolis-St. Paul region and the increased state role in equalizing education funding, there has been little careful work done on fiscal equities and disparities among local governments in metropolitan regions. Documentation of such fiscal differences is at the very heart of these fiscal investigations in metropolitan areas, and, particularly, the question of whether local governments with low revenue raising capacity realistically have the ability by themselves to provide adequate levels of public services to their residents.

This project examined one component of a metropolitan region's fiscal capacity: the revenue raising capacity of individual local governments. Revenue raising capacity is the amount of revenue a local government can raise if it applies the average tax rate for all local governments in the metropolitan area for each tax to its own tax base for each of the taxes a local government is permitted to levy under state law.

Some local governments in a metropolitan area will have high revenue raising capacity, enabling them to extract sufficient monies to meet citizen and governance needs with minimal revenue effort. Other jurisdictions will have less ability to raise revenues from own sources and will have to expend more effort to raise what is needed. This fiscal capacity imbalance means that some jurisdictions are able to meet citizen and governance needs mostly from own source revenues, while other jurisdictions are not.

Until recently, fiscal capacity was a concept of interest mostly to economists. As the courts have increasingly begun to advance equity goals throughout a state for certain services such as education, fiscal capacity has gained more prominence as one of the tools policymakers utilize to advance these equality goals. It continues to be a matter of public and legal debate as to whether fiscal disparity in any given metropolitan area constitutes a problem, and as to what policies, if any, should be implemented to address it.

Fiscal capacity measurement, including both revenue raising capacity and expenditure needs, is also a procedure that is rarely undertaken because of its inherent resource-expenditure challenge. While fiscal capacity, including its two components revenue raising capacity and expenditure needs, can usefully identify disparities and inequities in a metropolitan area, it is inordinately hard to accomplish because of the extreme expense of time in gathering the needed data and in making estimations when data do not materialize.

Two factors drove our research: the utility that can be made through knowing the revenue capacity of local governments in a metropolitan area, and the desire to find a cheaper proxy for a procedure that presently is complex, difficult, and time-consuming, and therefore costly.

Our goals for this project evolved from these two facts. We wish to examine the revenue disparities and inequities among local governments in six metropolitan areas. We develop, for

testing, some hypotheses about variations in fiscal capacity across metropolitan areas. We devise and apply the most rigorous possible revenue capacity RRS methodology, then also employ several other less expensive and less complex methodologies including personal income per capita. We employ these other methodologies in sensitivity tests to discover a lower cost and simpler substitute for the RRS methodology, and to accomplish this less complex and costly substitute without severely sacrificing accuracy.

We proceed in this manner to produce a better understanding of intrametropolitan revenue raising capacity and effort among the research community, and also to inform policy makers on these issues.

THE REPRESENTATIVE REVENUE SYSTEM

Public finance and policy analysts have been concerned about the fiscal capacity of subnational governments for several decades.[1] Over the years, a variety of conceptual approaches to defining and measuring subnational revenue and fiscal capacity have been developed. These various measures include per capita income, per capita gross state product, total taxable resources, export-adjusted income, and two measures developed by the U.S. Advisory Commission on Intergovernmental Relations – the Representative Tax System and the Representative Revenue System.[2]

Intrametropolitan fiscal disparities are defined as the difference between revenue capacity and expenditure need among local governments within a metropolitan region, standardized as deviations from the regional average. Revenue capacity is the amount of revenue a government would raise if it applied the average tax rate for local governments in the region for each tax to its own tax base for each of the taxes a local government is permitted to levy under state law. Expenditure need is the cost of providing an average package of public services for each government in the area, taking into account differences in need. This study focuses on the revenue capacity side of the fiscal disparities problem.

There are two primary approaches for measuring the revenue raising capacity of local governments: ability-to-pay measures and revenue-generating measures.

Ability-to-Pay Measures

Ability-to-pay measures revolve around the income and productivity of a jurisdiction, and their focus is on the ability of a jurisdiction's residents and business owners to pay taxes, relative to other comparable municipalities, using some proxy for ability-to-pay. Typically, per capita income is used as a measure of ability-to-pay taxes. Sometimes, gross state product is used.

An alternative approach to implementing ability-to-pay measures of revenue capacity is to calculate the amount of revenue that would be raised if a jurisdiction's residents were taxed at a rate equal to the average tax burden in the region – where the average tax burden is defined as a standardized percentage of taxed income for all residents in the jurisdiction.[3]

Bradbury and Ladd put forward an ability-to-pay approach to estimating the revenue capacity of local governments which is referred to as the *export adjusted income approach.*[4] According to their approach, the revenue capacity of a local government is defined as the per capita revenue a city can raise from tax bases in the city given a specified burden on local resident income plus revenues exported to nonresidents. This is expressed as follows:

$$FC = kY(1+e)$$

FC is per capita fiscal capacity of a local government
k is a given tax effort by local residents
Y is per capita resident income
e is the portion of each tax borne by nonresidents.

This approach requires estimation of the incidence of individual taxes and apportioning that incidence to residents and nonresidents. The incidence of individual taxes, however, may vary from community to community depending on economic circumstances. As a result, any incidence study is dependent on simplifying assumptions made to carry out the study so there is a subjective dimension introduced into the analysis.[5]

Several studies have used ability-to-pay approaches to measure regional fiscal capacity. The most common measure used in the literature is the income-with-exporting approach, which estimates fiscal capacity as the amount of revenue that would be generated if residents were taxed at a rate equal to the average tax burden in the region, supplemented by revenue generated from taxes exported to nonresidents. Wasylenko and Yinger (1988) used this approach for examining the fiscal capacity of Nebraska municipalities, counties and school districts. Personal income taxes, property taxes, sales taxes, user charges and miscellaneous taxes were included in their analysis, and standard tax burdens equaled the ratio of the total state revenue collected for each tax to the income of municipal residents. They controlled for exported taxes by calculating export ratios for property and sales taxes. The authors found that the recent addition of a personal income tax in the state of Nebraska decreased the progressivity and increased the horizontal equity of the state's tax structure. In order to increase the fiscal capacity of the state's municipalities, the authors recommended a series of reforms to the state's sales, property, and school finance systems.

In their 1989 book, *America's Ailing Cities*, Ladd and Yinger applied a similar income-with-exporting methodology to measuring the fiscal capacity of 86 U.S. cities. They found that decay in the economic health of cities in the 1972-82 period had led to a decreased ability of cities to finance public services with own-source revenues, and that exported taxes were a critical part of many cities' budgets. In addition, they found that using per capita income as a gauge of revenue raising capacity understated inter-area variations in fiscal capacity because individual variations in residents' incomes, as well as variations in tax policies regarding export taxes, were not captured in the measure**.**

Ladd, Reschovsky and Yinger utilize the export adjusted income approach to measuring fiscal capacity to examine the fiscal condition of 179 cities in Minnesota with populations greater than 2500.[6] In estimating the revenue capacity of cities in their study, the authors recognize that

80% of own-source revenues of the average Minnesota cities in the study came from property taxes. Other own-source revenues include the utility franchise tax, local sales and gravel taxes, licenses, permits, and user charges. Ladd, Reschovsky and Yinger argue that user charges differ from the other local revenue sources because they resemble a price for a specific service. Therefore, user charges are not treated as a separate revenue source; instead spending financed by user charges is netted out in calculating expenditure need. Because the remaining revenue sources are small, they are omitted from the calculation of revenue capacity. They define revenue capacity as the amount of money a city would generate from the property tax if it imposed either a standard burden on residents or a standard tax rate. The article does not provide a detailed discussion of how these estimates are determined.

Ability-to-pay measures of fiscal capacity have several weaknesses. In their original study, Ladd and Yinger found that using per capita income as a gauge of revenue raising capacity understated inter-area variations in fiscal capacity because individual variations in residents' incomes, as well as variations in tax policies regarding exported taxes, were not captured in the measure. In addition to underestimating inter-area variations, these types of measures do not capture the unique tax structures and capabilities of individual jurisdictions. This is problematic because a jurisdiction's revenue raising capacity is largely a function of the taxes that they levy and the base on which they tax. However, because of their reliance on regional economic indicators, such as personal income or gross state product, as opposed to individual policies and tax bases, most ability-to-pay measures fail to reflect the intricacies and idiosyncrasies of jurisdictional revenue raising capabilities.

Revenue Generating Measures

As an alternative to ability-to-pay measures, the Advisory Commission on Intergovernmental Relations (ACIR) developed two measures of regional revenue raising potential that reflect the importance of regional tax bases and tax policies. These measures are known as the Representative Tax System (RTS) and the Representative Revenue System (RRS)[7], and instead of focusing on the ability of residents to pay taxes; these approaches focus on the hypothetical ability of state or local governments to raise revenues.[8] The ability of jurisdictions to raise revenues is estimated by calculating the amount of revenue that would be raised if a jurisdiction applied a standard, representative tax rate to their existing tax base. The standard tax rate is defined by statewide or regional average tax rates as they apply to different tax bases. There are eight types of taxes included in the RTS measure and twelve types of tax and non-tax revenues included in the RRS measure.[9] The RTS methodology is a more comprehensive measure of revenue raising ability than personal income because it more accurately reflects the diversity of tax and revenue sources as well as their ability to 'export' taxes, that is, to levy taxes that are ultimately paid by nonresidents.[10] Because the same tax base definitions and tax rates are used for every state, revenue yields estimated under the RRS vary across states only because of difference in the underlying economic bases that are available to be taxed.

The RTS and RRS approaches to measuring revenue capacity are not without their critics. The two primary criticisms of these two approaches to measuring revenue capacity are that they assume that individual tax bases are independent of each other and that these measures are independent of the fiscal decisions of individual governments. First, the ability of a jurisdiction

to tax property wealth will depend, in part, on the income levels of the residents since property taxes are paid out of current income. Barro argues that because the RTS measure of revenue capacity ignores these interdependencies, the RTS index gives unduly low weight to income relative to other tax bases.[11] ACIR acknowledges the intuitive appeal of this argument, but also acknowledges that theory does not suggest how variances in these relationships affect fiscal capacity.[12]

The second major criticism of the RTS and RRS approach is that many of the revenue bases used in these indices are not independent of a government's fiscal decisions. Specifically, the argument is that government policies such as tax rates, zoning, and subsidies affect the size of individual tax bases. For example, in the case of real estate taxes, the literature documents how differences in tax rates relative to public service levels are capitalized into housing values so that low tax states can have higher property values than they would if they charged higher rates. Again, ACIR acknowledges this concern by recognizing that if all states taxed at the national average rate for each tax base the distribution of each tax base would certainly be different then the reality of today. Again, the issue is what can be done to correct for this limitation. In this case, researchers would have to estimate how location patterns, business, industry, sales, and population would be spatially distributed differently than the current situation – a near impossible task.[13]

ACIR applies the RTS and RRS concepts for measuring revenue capacity and effort to the 50 state-local fiscal systems.[14] Their unit of observation is the state. The objective of this study is to apply the concept to individual local governments within a metropolitan area. Specifically, this project responds directly to an important recommendation for research needs made in the National Academy of Science's report, *Governance and Opportunity in Metropolitan Areas*:

"There is substantial research on tax/service disparities among major cities across metropolitan areas, but only scattered research on variation in tax/service capacity among local governments within metropolitan areas. A basic task is to compile data on variation in fiscal capacity among local governments in each (or a substantial sample of) metropolitan areas, as well as changes over time."[15]

As suggested by the National Academy of Science report, there is very little experience investigating the revenue capacity and effort of individual local governments within a metropolitan area. ACIR did apply the RTS concept to 69 Standard Metropolitan Statistical Areas (SMSAs) using data from 1977 and 1980.[16] The report estimated the capacity of local governments in SMSAs to raise revenue by applying the average tax rate in all such governments to each of seven tax bases in each of the selected SMSAs – individual income taxes, general sales taxes, residential/vacant real estate, agricultural real estate, commercial/industrial real estate, other taxes, and current charges. We have worked in this report to incorporate the many types of individual local governments as the basic units of observation.

In a 1993 study, Green and Reschovsky examined fiscal disparities across 285 municipalities in Wisconsin with populations in 1991 of more than 2,500. They estimate both expenditure needs and revenue capacity of individual local governments and analyze the

resulting fiscal conditions and state aid programs. Green and Reschovsky define a municipality's tax capacity as the amount of property tax revenue it would raise if all municipalities were to levy a uniform property tax rate on their residents. They chose as the uniform rate the average municipal property tax rate for the 285 municipalities in their study. While local governments in Wisconsin also receive some revenues from public accommodations (hotel) tax, and from licenses, fines, permits, and user fees, Green and Reschovsky ignored these elements of municipalities' revenue raising capacity because there was no easily accessible data and because these sources of revenue were generally small.[17] They found that revenue raising capacity was the lowest in Wisconsin's smallest and largest cities. Villages had the greatest ability to generate own-source revenues, followed by towns and cities.

Similar to the Green and Reschovsky study, in 1996, David Sjoquist applied the RRS methodology to a study of the fiscal capacity and effort of local governments in Georgia – specifically, counties and municipalities with populations over 1,000. Property taxes, sales taxes, business taxes, charges and other tax revenue were included in his analysis, although special districts and school districts were excluded. Average tax rates were based on statewide averages and tax bases were calculated for each specific tax.

Thus, because both of these studies base average tax rates on statewide averages versus metropolitan area averages, they do more to explain inter-metropolitan disparities in tax capacity, versus disparities in tax capacity within metropolitan areas.

We are not the first to use other than metropolitan areas or counties as our unit of observation, though we may be the first to be so inclusive of municipalities within a metropolitan area; and, for our Baltimore metropolitan area, special districts also. There are three primary studies focusing on *intrametropolitan* disparities in tax, or revenue, capacity using the RTS or RRS approaches. Rafuse and Marks applied the representative revenue and expenditure systems developed by ACIR to investigating fiscal disparities across 40 municipalities within the Chicago metropolitan area.[18] Their study was complicated by the fact that the six county metropolitan area of Chicago is made up of more than 1,200 independent local jurisdictions with overlapping areas of responsibility. In fact, there were some 345 governmental entities providing services to the residents of the 40 municipalities selected for the study. Rafuse and Marks included 11 categories of revenues in their study – intergovernmental revenues, property taxes, general sales taxes, motor fuel taxes, motor vehicle license taxes, other taxes, current charges, interest earnings, all other own general revenues, utility revenues, and insurance trust revenues. Resident money income is used as the representative base for all revenue sources except property taxes (equalized assessed value) and general sales taxes (total retail sales in a municipality as reported in the 1987 Census of Retail Trade). The authors found that the city of Chicago's index of fiscal capacity was 28 % lower than that of the average of the municipalities included in their study. When accounting for intergovernmental revenue sources, Chicago's fiscal capacity index still remained 13 % lower than the regional average.

In his 2002 book, *American Metropolitics: The New Suburban Reality*, Myron Orfield studied the intrametropolitan disparities in fiscal capacity in the 25 largest metropolitan areas of the United States. The study area included 30 large cities, 4,606 incorporated municipalities and 135 unincorporated areas.

A modified version of the Representative Tax System (RTS) was used to calculate the tax capacity of municipalities in the nation's 25 larges metropolitan areas. Metropolitan-level average tax rates, as opposed to national average tax rates, were used to measure local own-source revenue raising capacities. Property,[19] general sales (nothing on selective sales taxes) and income taxes were used in the calculation, while fees and charges were excluded from the measure because of conceptual difficulties in defining the tax bases and the impossibility of data collection. All other local taxes were also excluded from the study.

Given the complexities of the data requirements, efforts were required, at times, to construct some data when actual data were not available. For example, in some cases the researchers had actual revenue collections and statutory rates, which they used to calculate an estimate of the base of the tax for individual jurisdictions. Similarly, in six of the metropolitan areas included in the study, local governments only had access to one tax source. In the 19 metropolitan areas where local governments had access to more than one revenue source, the tax-capacity calculation was adjusted to reflect the fact that revenues from one tax do not displace or augment revenues from other taxes dollar for dollar. Additional adjustments were made for localities with special access to a specific tax, to jurisdictions that combined county and municipal governments, and to jurisdictions using a classified property tax system.

The focus of Orfield's work is on municipalities only; he does not include any other general-purpose governments (e.g., counties) or single purpose governments (e.g. school districts) in his empirical analysis. As a result, he does not look at the total revenues within the metropolitan area being generated by individual revenue sources. As a consequence, average taxes rates computed for municipalities alone will be lower than they would otherwise be if all taxes collected in the metropolitan area were included, so his capacity measures are lower than they would be if all jurisdictions were included.

There is no consistent pattern in his findings across metropolitan areas. In some cases the central city has strong revenue raising capacity (e.g. Denver and Atlanta) while in other cases the tax capacity of the central city is relatively low (e.g. Boston, Milwaukee, and Philadelphia). There is also substantial variation across suburban municipalities – some with higher tax capacity and some with lower tax capacity. The spatial pattern of these suburban jurisdictions varies across metropolitan areas as well. The overall conclusion is his declaration that the myth of the suburban monolith is dead.

To this date, Bell and Clark (2004) have conducted the most comprehensive research on fiscal disparities within metropolitan regions. The authors employed a modified version of the RTS approach, using the regional average tax rate as their comparison point, to analyze the revenue capacity disparities present in the Washington, DC Primary Metropolitan Statistical Area (PMSA). Again, because of the intensity of data requirements, some simplifying assumptions were made. The authors restricted their analysis primarily to the county level, and included large, independent municipalities, while leaving out smaller jurisdictions. However, although smaller jurisdictions were not individual elements of the analysis, adjustments were made for excluded jurisdictions in countywide totals.[20] Despite these simplifying assumptions,

this study until now is the most comprehensive in empirically examining the intrametropolitan fiscal disparities in any region.

While application of the RRS system requires some simplifying assumptions, generally they are not as critical to the outcome of the analysis as the underlying assumptions inherent in the export adjusted income approach of Bradbury and Ladd. Also, data requirements for the RRS may be somewhat less of a constraint than the data requirements of the export adjusted income approach which is trying to estimate the incidence of individual revenue sources across a large number of cities with different economic circumstances. We believe that the RRS is relatively comprehensive and easier to measure than some of the other approaches to measuring revenue raising capacity. As a result, this study uses the RRS framework for calculating the revenue capacity and effort of local governments within the six metropolitan study areas.

SOURCES OF TAX AND NON-TAX REVENUES

As applied to the 50 states by ACIR, the RRS includes 28 state and local taxes and 3 non-tax sources of revenue. These revenue sources are detailed in Table A-1 of Appendix A. Our focus in this project differs from the ACIR focus on state and local revenues. ACIR used the state as the unit of observation, but our focus is on the revenue capacity and effort of individual local governments within a metropolitan area. We use the local government as the unit of analysis—counties, municipalities, school districts, and special districts. Therefore, in calculating revenue raising capacity and effort we exclude revenue sources that are traditionally state level revenues – e.g. corporate income tax, motor fuels tax, death and gift taxes, estate and gift taxes, severance taxes and occupational and business licenses. We only include revenue sources that are utilized, or could potentially be utilized, by local governments in the study area.

This study examines five major revenue sources available to local governments: three taxes and two charges. These five include 1) property tax revenues disaggregated into two categories – real property and personal property, 2) personal income tax revenues, 3) total sales tax revenues disaggregated into two subcategories of general sales and total selective sales (that, in turn, includes public utility sales and other selective sales), 4) general user charges revenue with thirteen subcategories, and 5) public utilities charges revenue including the four subcategories of water, gas, electric, and transit. Similarly, non-tax revenue sources not available to local governments would be inappropriate to include in our study. Lottery revenues fall into this category. Table 1 lists the revenue sources as well as their representative revenue bases used in this study. Only those revenue sources legally available to individual local governments within each metropolitan area are included for that specific case study. Exhibit A in Appendix A describes the steps involved in moving from the more comprehensive Census data file to the work file used in this study.

Table 1
Representative Revenue Sources and Bases
Included in This Research

Revenue Sources	Representative Revenue Base
1. Property Tax	
◦ Real Property Tax	The assessed value of all taxable real property at 100% of market value
◦ Personal Property Tax	Assessed value of tangible personal property and vehicle personal property
2. Personal Income Tax	Adjusted Gross Income
3. Total Sales Tax	
◦ General Sales Tax	Aggregate value of total retail sales
◦ Total Selective Sales Tax	
-Public Utility Sales Tax	Aggregate Personal Income
-Other Selective Sales Tax	Aggregate Personal Income
4. General User Charges	Aggregate Personal Income
5. Public Utilities Charges	Aggregate Personal Income

All six metropolitan areas use property tax revenues as the largest source of revenue collections from the Milwaukee metropolitan area at 71.43% to the Las Vegas metropolitan area at 43.88%, but all exhibit very individual characteristics in usage of these five major revenue sources. (Table 2) The Baltimore metropolitan area is the sole area to rely to any degree on income taxes, while the San Francisco metropolitan area is the only one to rely second-most upon sales tax after property taxes. In addition, San Francisco is the only region with a payroll tax.

Table 2
Revenue Sources Percentages for the Six Metropolitan Areas

Revenue Sources	Property Tax	Personal Income Tax	Total Sales Tax	General User Charges	Public Utilities	Payroll Tax
Baltimore MA	50.50%	28.33%	3.16%	14.75%	3.26%	0.00%
Las Vegas MA	43.88%	0.00%	10.65%	24.54%	20.93%	0.00%

Miami MA	53.53%	0.00%	12.25%	25.93%	8.29%	0.00%
Milwaukee MA	71.43%	0.00%	3.35%	18.25%	6.96%	0.00%
Richmond MA	52.81%	0.01%	13.38%	18.50%	15.31%	0.00%
San Francisco MA	49.83%	0.00%	17.89%	15.06%	11.22%	5.99%

Once the revenue sources to be included in the study were determined, there were basically four steps in developing measures of revenue capacity and effort for individual local governments in each study area. First, we gathered information on actual revenues collected by all local governments in the study areas (counties, municipalities, school systems, and special districts) for the revenue sources included in this research. Second, we gathered information on the base of each revenue source for each local government in the study areas. For each metropolitan study area, we wanted to have a uniform base definition that is applied across all local governments in the study area because our focus is on differences in revenue raising capacity resulting from differences in their underlying economic circumstances. Third, we calculated an average effective tax rate for each of the metropolitan areas, which is then applied to the base of each revenue source in each jurisdiction to determine hypothetical revenue capacity per capita. In the fourth step, we computed a measure of revenue effort for each jurisdiction in each of the six study areas by comparing its actual per capita collections with the hypothetical amount it could have collected per capita if it taxed each base at the average effective rate.

SELECTION OF THE SIX STUDY AREAS

A critical first step in this process was the selection of metropolitan areas for the six case studies. We proposed metropolitan areas to be included in the fiscal disparities study based upon four criteria: (1) the degree of governmental fragmentation, (2) the presence of local sales and income taxes – including a payroll tax, (3) regional representation from within the continental U.S., and (4) the population of the study area. These four criteria are discussed in more detail below.

1. Degree of governmental fragmentation

The degree of governmental fragmentation within a metropolitan area was an important criterion used in our decision process because highly fragmented metropolitan areas pose a significant challenge in terms of data availability, gathering and analysis. Using data from the Census Bureau's Governments Integrated Directory, we were able to assess the relative levels of intrametropolitan governmental fragmentation among metropolitan areas, and subsequently, we proposed areas (with the exception of Milwaukee) with relatively centralized governmental structures and few independent school districts.

While we avoided the most fragmented metropolitan areas because of limited time and resources, we do have some variation in the number of local governments included in the

metropolitan areas selected. As shown in Table 3 below, the number of jurisdictions within each metropolitan area as specified in the 2002 Census of Governments ranges from 24 in the Las Vegas metropolitan area to 195 in the Milwaukee metropolitan area, and from one county in the Las Vegas metropolitan area to 16 counties plus four independent cities in the Richmond area. We found that when we requested information from the states on special districts, we invariably received a list that did not match the entries in the 2002 Census of Governments. For the six metropolitan areas, additional special districts exist, but we omitted them from the research due to unavailability of Census data for them.

In addition, using data from the National Center for Education Statistics, we were able to determine whether school district boundaries are coterminous with the boundaries of existing general-purpose governments. This is an important characteristic given the independent taxation power of local school districts and the fact that school district boundaries often differ from other local governmental boundaries. The metropolitan areas we proposed generally have school district boundaries that coincide with the boundaries of existing local governments. Coterminous boundaries enable us to have a consistent school-system-to-county geography within each of the metropolitan study areas. This enables us to use the same fiscal base data for the school system that we use for the county.

2. Presence of Local Sales/Income Taxes

Cities with local sales and income taxes are more work-intensive when it comes to data availability, collection and analysis. However, in order to diversify our sample, we felt that it was important to include metropolitan areas with varying tax structures. Thus, our study sample included two metropolitan areas that have central cities with local sales taxes, one metropolitan area with a central city that collects local income taxes and one metropolitan area with a central city that has a local commuter (wage) tax. The remaining two metropolitan areas do not contain central cities with local sales or income taxes.

3. Regional Representation

Regional representation was another important guideline used in our sample selection, and, in order to obtain a regionally representative sample, in two cases we chose to sacrifice a small degree of governmental fragmentation in exchange for a more regionally balanced selection. As a result, our set of case study metropolitan areas is representative of cities from all four regions of the contiguous United States (Northeast, Midwest, South and West).

In our preliminary analysis, we found that the least fragmented metropolitan areas were largely located in the Southern United States, while Northeastern, Western and Midwestern metropolitan areas exhibited a much higher degree of governmental fragmentation. Thus, one of our case study metropolitan areas (Milwaukee, Wisconsin) was slightly more fragmented in exchange for representation from its respective Midwest region.

In addition, a Census-defined Northeastern city was not included in our study because the degree of fragmentation in Northeastern cities is such that the data collection and analysis would be too intensive given the scope and timeframe of the project. However, although final study

area selections included no metropolitan areas from the Census-defined Northeastern region, Baltimore, Maryland is representative of a Northeastern city in terms of proximity and city characteristics, and is therefore included in our selection to represent that quadrant of the U.S.

4. Population

In order to ensure comparability among metropolitan areas, all of the study areas we included had a 2000 population over 1 million and are considered to be Major Metropolitan Areas by the Office of Management and Budget. The population of the metropolitan areas we included range from 1 million to 2.4 million people.

Thus, based upon our selection criteria we chose the following metropolitan areas as our case study sites for this project – Baltimore-Towson, Maryland; Las Vegas-Paradise, Nevada; Miami-Miami Beach-Kendall, Florida; Milwaukee-Waukesha-West Allis, Wisconsin; New Orleans-Metairie-Kenner, Louisiana; and San Francisco-San Mateo-Redwood City, California.[21] However, when we began collecting revenues and their base data for local jurisdictions in each metropolitan area, serious data availability issues emerged in the New Orleans-Metairie-Kenner Metropolitan Area. After several months of unsuccessful efforts to locate and collect the needed data, we elected to substitute the Richmond, Virginia metropolitan area for the New Orleans metropolitan area.

The decision about which jurisdictions within each metropolitan area to include in the study was based upon the Office of Management and Budget's (OMB) 2000 definitions for Metropolitan Statistical Areas and Micropolitan Statistical Areas.[22] The term Metropolitan Division (MD) is used to refer to a county or group of counties within a Metropolitan Statistical Area (MSA) that has a population core of at least 2.5 million.[23] Throughout the text of this paper, we refer to both Metropolitan Divisions and Metropolitan Statistical Areas as "Metropolitan Areas" (MA).

REFINING THE STUDY AREAS

After selecting the six metropolitan areas, the next screening procedure was to locate those local jurisdictions within the metropolitan areas that were included in the 2002 Census of Governments, and to remove from our set any general and special purpose local governments not included there. This was necessary because 2002 Census of Governments data supplemented the information that we collected from the states and localities.

Within time and resource constraints, every effort was made to obtain all necessary data for this final set of local jurisdictions. However, these resource constraints, plus unavailability of data within some states, determined the governmental units for which ultimately we were able to obtain actual data. In situations where actual data were not available, we devised procedures for estimating or approximating unavailable figures. The explanations for these estimates are presented within each case study report (see Appendices B through G).

The number and type of local jurisdictions in the 2002 Census of Governments for the six studied metropolitan areas vary considerably, as summarized in Table 3. Examples include the Milwaukee metropolitan area with towns, Baltimore and Richmond with independent cities, and the San Francisco metropolitan area with its consolidated city-county of San Francisco. A more detailed list of jurisdictions included in the study is contained in Table A-2 in Appendix A.

These variations required adjustments from state to state. The individual revenue capacities and efforts of the independent city of Baltimore in Maryland; the city-county of San Francisco in California, and the independent cities of Colonial Heights, Hopewell, Petersburg, and Richmond are treated as counties.

Table 3
Units of Local Government in the 2002 Census of Governments
For the Six Metropolitan Areas

	Baltimore MA	**Las Vegas MA**	**Miami MA**	**Milwaukee MA**	**Richmond MA**	**San Francisco MA**
Counties*	7	1	1	4	16	3
Townships	-	-	-	31	-	-
Municipalities	19	5	30	59	14	31
Independent School Districts	0	1	2	53	0	45
Special Districts	18	17	7	48	27	104
Total	44	24	40	195	57	183

*In the Baltimore metropolitan area, Baltimore City as an independent city is placed for statistical purposes by the U.S. Census Bureau within the county classification, creating the 7 "county" total. The San Francisco metropolitan area contains a consolidated city-county also classified similarly as a county, again creating a 3 "county" metropolitan area. The Richmond metropolitan area has four independent cities. The U.S Census Bureau treats Virginia independent cities for statistical purposes as county equivalents.

The 2002 Census of Governments shows that the states of Maryland, Nevada, and Virginia have relatively simple systems of local government. They have a comparably small number of independent local governments – 265, 210, and 521 respectively. Only five states have fewer numbers of local governments – Alaska (175), Delaware (339), Hawaii (19), Louisiana (473), and Rhode Island (118). California has the most numerous local governments within our study sample at 4,409. Our other two study states are Wisconsin with 3,048 and Florida with 1,191. Fourteen states have more than 2,000 units of local government with Illinois (6,903) and Pennsylvania (5,031) having the most.

For three metropolitan areas, the Las Vegas, Baltimore and the Richmond metropolitan areas, we aggregated special district data into one sum that we used to calculate both hypothetical and actual revenues. For the other three metropolitan areas, we added special district revenues into their respective county's revenue totals, but we did not have the means to

create hypothetical capacity figures for these special districts. See the Appendices for each case study for a more detailed explanation as to how special districts were handled.

For our Baltimore metropolitan area case study, we were able to collect for the special districts all the data that we obtained for general purpose governments and for school districts. We use those more comprehensive figures in the Baltimore case study to extend our analysis to examine the revenue capacity and effort of the counties, municipalities, and special districts in the region. This means we used figures for the Baltimore metropolitan area in the comparison overview that were derived in a fashion parallel to our other case studies, but took a more comprehensive set of figures for our case study. Thus, the reader will see a different set of data for the Baltimore metropolitan area case study than is seen in the comparative overview.

METHODOLOGY

Step 1: Revenue Collections

In order to facilitate data collection, given the need to maximize resources, we use revenue, population and income data from the U.S. Census Bureau. The U.S. Census Bureau has micro level data available on the actual collections of local governments by source for FY2002, and on characteristics of the population for 2000.

This two-year gap between financial and demographic data can create miscalculations in fast-growing or fast depopulating metropolitan areas. A significant shift in population can create misleading per capita figures. For example, the Las Vegas metropolitan area, for this study, Clark County, grew from its Census 2000 population of 1,375,765 to a Census-estimated 1,522,164 in July 1, 2002[24], an increase of 9.62%. As an example of the impact the mismatch creates, using the estimated population for 2002 so as to match the financial data year reduces the hypothetical collections per capita for Clark County from $1831 to $1655. We have since learned that estimates for small places are available for 2002 for the U.S. Census Bureau[25], and subsequent research will utilize 2002 population estimates to eliminate this issue.

The 2002 Census of Governments data include revenue collections by source for all types of local governments (counties, municipalities, independent school districts, and special districts). We found that many of a metropolitan area's revenue raising special districts did not appear in the U.S. Census Bureau's listing. The Census Bureau denotes 17 special districts for the Las Vegas metropolitan area, Clark County for this study, and it has 88 Tax Districts, some of which are special districts that provide typical municipal services. An official with the Clark County Office of the Assessor noted that many Clark County special districts were not shown in the Census Bureau special districts' list.[26] For any area where special districts are undercounted by the Census Bureau, we will have underrepresented revenue collections. Furthermore, state oversight of financial reporting for special districts was not as rigorous or attentive as it was for counties and municipalities; thus special district data collection required significant allocation of research resources and

Table 4
Percent Total Local Own-Source General Revenue by Government Type

	County	Cities	School District	Special Districts
Baltimore Metropolitan Area	97.5 %	1.6 %	Not Independent	0.9 %
Las Vegas Metropolitan Area	49.9%	21.5%	22.4%	6.3%
Miami Metropolitan Area	49.4%	24.5%	25.9%	0.2%
Milwaukee Metropolitan Area	16.9%	35.0%	42.6%	4.5%
Richmond Metropolitan Area	88.9%	0.7%	Not Independent	10.4%
San Francisco Metropolitan Area	10.0%	61.7%	19.3%	9.0%

As Table 4 shows, the Baltimore and Richmond metropolitan areas have the most centralized local government revenue collection systems, with 97.5% and 88.9% of total own-source general revenues collected through the counties respectively. In the San Francisco metropolitan area, cities account for 61.7% of total local own-source revenue collections.

Finally, we need to remember that we only include in our revenue collection numbers those revenues collected from sources actually used by, or legally available to, local governments in each study area. We have excluded revenues from state type revenue sources. For example, we exclude from Current Charges those revenues from higher education and hospitals, which are typically state responsibilities.

Step 2: Revenue Bases

As mentioned above, it is critical that we have comparability of economic revenue bases across jurisdictions to insure that the representative, standard revenue bases capture only the variations in economic situation across local governments. At the county and municipal level, the needed data are sometimes difficult to obtain or do not exist; therefore, in some cases we had to estimate the value of an appropriate revenue base for a particular tax or user charge through derivation from distinct but related data. This was even truer for special districts in the one instance of the Baltimore metropolitan area where we worked to include special districts as well. Details of the methods for estimating individual tax bases are contained in Appendices B through G. The following provides a brief summary of the economic base data we used for each revenue source included in the calculation of revenue raising capacity.

Property Tax Base

The property tax base has two components – real property and personal property. The representative, standard base used for real property is the assessed value of all taxable real property at 100% of market value – this excludes property that is typically exempt from property

tax such as government buildings, churches, and charities. In states where assessed value is not set at 100% of market value – for this report, only Nevada - we inflated the valuations to achieve 100% market value. We were not able to make adjustments in the real property tax base for property tax relief mechanisms like the ceiling on growth in assessed values in Maryland.

The personal property tax is an important source of revenue for local governments in three of the six metropolitan areas included here. Table 5 presents personal property revenues as a percent of all property tax revenues for the six metropolitan areas.

Table 5
Personal Property Tax Revenue as a Percent of Total Property Tax Revenue

	Baltimore Metropolitan Area	Las Vegas Metropolitan Area	Miami Metropolitan Area	Milwaukee Metropolitan Area	Richmond Metropolitan Area	San Francisco Metropolitan Area
Personal Property Tax Revenue	$352,972,944	$127,892,864	$94,801,204	$31,202,901	$260,924,933	$127,633,301
Total Property Tax Revenue	$2,294,262,000	$1,105,352,000	$2,215,885,000	$1,972,256,000	$965,321,000	$2,223,996,000
Percent Personal of Total Property Tax	15.4%	11.6%	4.3%	1.6%	27.0%	5.7%

The proportion of property taxes that is generated from taxes on personal property varies significantly among the metropolitan areas. This is because of the different ways that states define and tally personal property into their accounting methods. In Virginia personal property is especially significant for local governments, because Virginia includes automobiles as personal property for tax purposes. In the Baltimore metropolitan area, some railroad and public utilities (RPU) figures that include both real and personal property are counted under personal.[27] Las Vegas includes as business personal property all hotel and gambling equipment as well as other equipment, which can be substantial.[28] Personal property taxes account for 27% of all property tax revenues in the Richmond metropolitan area, 11.6% of the property tax revenues in the Las Vegas area, and 15.4% in the Baltimore metropolitan area. In San Francisco, Miami and Milwaukee, personal property taxes make up a much smaller proportion of overall property tax revenues, as personal property taxes account for 5.7%, 4.3% and 1.6% of property tax revenues respectively.

Total Sales Tax Base

Total sales tax revenues in the study include local governments' own source revenues from general sales taxation and total selective sales tax collections, the latter including public utility sales and other selective sales.

The representative tax base for the general sales tax is the aggregate value of taxable retail sales. These figures were obtained from the 2002 Economic Census. Maryland was the only included state that does not permit local governments to levy sales taxes.

The 2002 Census of Governments defines selective sales taxes as taxes imposed on the sale of particular commodities or services or on the gross receipts of particular businesses separately and apart from the general sales tax. The Advisory Commission on Intergovernmental Relations included nine separate selective sales taxes in their calculations of Representative Revenue Systems for the 50 states. However, many of these selective sales taxes are state-only revenue sources. For example, ACIR includes in its measures selective sales taxes on motor fuel, insurance premiums and alcohol. Local governments typically do not have access to these revenue sources so we excluded them from our estimates of local own-source revenue raising capacity. However, based on the experiences of local governments in our six study areas we do include in total selective sales taxes those taxes on public utilities and on other selective sales taxes.

Selective sales taxes on public utility sales include taxes on transportation companies, telephones, telegraphs and light and power. The base of the tax is generally the gross receipts or gross earnings of the company providing the service. Sometimes the tax may be based on the number of units sold, e.g. kilowatt-hours of electricity. Obtaining this base from the pertinent companies is not feasible. In any case, however, the base of the tax reflects consumption decisions by individual consumers. As a result, we use aggregate personal income for 1999 as the representative base for these selective sales taxes.

According to the Census of Governments' definition, other selective sales taxes include taxes on specific commodities, businesses, or services not reported separately under selective sales taxes. For example, this would include taxes on contractors, lodging, lubricating oil, fuels other than motor fuel, sales of motor vehicles, meals, soft drinks, margarine, etc. Unfortunately, the Census data do not break down total revenues from other selective sales taxes into these component parts. As a result, we use the 2000 Census of Population aggregate personal income for 1999 as the representative base for other selective sales taxes.

Income Tax Base

We use Adjusted Gross Income (AGI) for tax year 2001, which is FY 2002 covering the state fiscal year ending June 30, 2002, as the representative tax base for the income tax. The assumption is that each state utilizes a resident-based local personal income tax base.[29] Maryland and Virginia were the two included states where some local governments levy income taxes as totaled in the 2002 Census of Governments.

Payroll Tax Base

Only one jurisdiction in the study, the city/county of San Francisco, had a payroll tax. The payroll tax is a 1.5% tax on the total payroll expenses of persons and associations engaging in business in San Francisco that have an annual payroll of more than $166,667. We used the 2002 Economic Census data on payroll expenses for the base of this tax. For a detailed discussion of this tax, refer to Appendix G.

General User Charges Base

According to the Census of Governments' definition, current charges reflect "Amounts received from the public for performance of specific services which benefit the person charged and from sale of commodities or services." Basically, current charges are user charges, which reflect the consumption decisions of individual citizens. Thus, revenue generated from user charges depends, in large part, on prices and the resulting consumption choices of individual citizens. For the purposes of this study, then, we use aggregate personal income for 1999 from the 2000 Census of Population as the representative base for user charges.[30]

Public Utilities Charges Base

Public utilities revenues include revenues from water utilities, gas utilities, electric utilities and transit utilities. In each case, there is a charge for the service being provided – essentially making these revenues comparable to user charges. As a result, we again use aggregate personal income for 1999 as the representative base for public utilities revenues.[31]

Step 3: Estimating Revenue Raising Capacity

After the first two steps are completed, the third step in ACIR's RRS methodology is to calculate the revenue raising capacity of individual local governments. This step starts by calculating the average tax rate or user charge percent as applicable for each revenue source for all local governments included in our study. The average tax rate or user charge percent is calculated by dividing total collections of all local governments in the study area by the total base for all local governments in the study area for each tax or revenue source. The average tax rate or user charge percent for each revenue source included in our estimate of local revenue raising capacity is summarized in Table 6.

Table 6
Average Tax Rate and User Charge Percent for All Local Governments

Tax and Revenue Sources	Baltimore MA	Las Vegas MA	Miami MA	Milwaukee MA	Richmond MA	San Francisco MA
Real Property Tax	1.40 %	1.04%	1.98%	1.08%	1.09 %	1.44%
Personal Property Tax	3.39 %	1.02%	0.95%	1.14%	1.55 %	1.00%

Personal Income Tax	2.34 %	Not Used	Not Used	Not Used	0.0006%	Not Used
Payroll Tax	Not Used	Not Used	Not Used	Not Used	Not Used	1.35%
General Sales Tax	Not Used	0.66%	0.39%	0.51%	0.49 %	1.93%
Total Selective Sales	0.23%	0.73%	1.16%	0.06%	0.47 %	0.46%
Public Utility Tax	0.10 %	0.37%	0.76%	0.00%	0.27 %	0.20%
Other Select Sales Taxes	0.13 %	0.10%	0.19%	0.06%	0.20 %	0.26%
General User Charges	1.08 %	2.06%	2.56%	1.45%	1.33 %	1.06%
Public Utilities Charges	0.24 %	1.76%	0.82%	0.55%	1.10 %	0.79%

These average tax rates or user charge percentages are then applied to the appropriate revenue base in each jurisdiction to estimate the hypothetical potential revenue yield, or capacity, which would result from each revenue source if each jurisdiction used a standard base definition and applied the average tax rate or user charge percent to each base. The total revenue raising capacity of each local government is the total of the hypothetical revenue yield from each individual revenue source. The population of each jurisdiction is divided into the total hypothetical revenue to determine the hypothetical revenue raising capacity per capita for that local government. Use of this procedure means that differences in revenue raising capacity across jurisdictions reflect differences in economic circumstances, not differences in tax policies.

Next, the *revenue raising capacity index* is calculated for each local government by dividing their hypothetical revenue raising capacity per capita by the average hypothetical revenue raising capacity per capita of all local governments and multiplying it by 100. The revenue raising capacity index is a measure of each local government's potential revenue raising ability compared to the average of all local governments. Local governments with a revenue raising capacity index greater than 100 have above average revenue raising ability and those with a revenue raising capacity index of less than 100 have below average revenue raising ability compared to the average of the local governments in their own metropolitan areas.

Step 4: Estimating Revenue Raising Effort

Finally, the *revenue raising effort index* is calculated using both the hypothetical revenue capacity per capita, that is, revenue raising capacity per capita, and the actual collections per capita. Specifically, the revenue raising effort index is calculated by dividing the actual per capita collections of each jurisdiction by its per capita potential collections for each revenue source and multiplying by 100. Again, this index allows us to compare the extent to which local governments are utilizing their available resources in relation to the average of all local governments, which is 100. An index greater than 100 indicates that a jurisdiction is accessing

that revenue source to a greater extent than local governments on average are in the study area. An index less than 100 indicates a revenue source is being underutilized by a local government vis-à-vis the average for the entire study area.

Case Example of Revenue Raising Capacity and Effort Calculations

This section presents calculations for an individual county, so that each phase of the calculation is delineated. These calculations are detailed below using Anne Arundel County's property tax revenue as an example.

The first step, after data collection, is to calculate the *average tax rate* for each revenue source by dividing the total collections of all local jurisdictions by the total base for that revenue source.

1) Census-adjusted

Real Property Tax Revenue All Local Governments		Real Property Tax Base All Local Governments		Avg. Real Property Tax Rate
$1,941,289,056	/	$138,738,870,574	=	1.40%

Hypothetical Yield or Revenue Capacity

The *potential***,** or *hypothetical*, revenue that a local government can generate is calculated by applying the average tax rate or user charge percent for each revenue source to the appropriate standard, representative base for that tax or charge. Here, we have selected Anne Arundel County, Maryland, and the Real Property Tax share of Anne Arundel County's total revenue sources to demonstrate the process.

2)	Anne Arundel County's Real Property Tax Base		Average Real Property Tax Rate		Anne Arundel County's Hypothetical Real Property Revenue
	$33,562,329,822	X	1.40%	=	$469,617,370

Per Capita Hypothetical Yield, or Revenue Capacity

The hypothetical revenue is then divided by the local jurisdiction's population to arrive at the *per capita hypothetical revenue capacity***.**

3)	Anne Arundel County's Hypothetical Real Property Revenue		Anne Arundel County's Population		Anne Arundel County's Hypothetical Revenue Per Capita
	$469,617,370	/	489,656	=	$959.08

Revenue Raising Capacity Index

The *revenue raising capacity index* is determined by dividing the county's hypothetical real property tax revenues per capita by the hypothetical per capita real property tax revenues for all local governments and multiplying by 100.

4)	Anne Arundel County's Hypothetical Real Property Revenue Per Capita		All Local Governments' Per Capita Hypothetical Real Property Revenues		Anne Arundel County's Revenue Raising Capacity Index for Local Property Taxes
	($959.08	/	$760.40) x 100	=	126.13

Just as we have illustrated for Real Property, the above calculations are carried out for each revenue source as well as for total revenue, and then they are aggregated to obtain one measure of revenue raising capacity per capita and one revenue raising index. When we carried this sequence out for Anne Arundel County, the final capacity per capita value for all revenue sources was $2146.04 and the revenue capacity index was 120.60.

Revenue Raising Effort Index

The *revenue raising effort index* is calculated by dividing each local government's actual collections per capita by its hypothetical yield, or revenue capacity, per capita and then multiplying by 100. Below Anne Arundel County's revenue raising effort index is calculated for its total own source revenue.

5)	Anne Arundel County's Per Capita Actual Collections For Total Own Source Revenue		Anne Arundel County's Per Capita Hypothetical Total Own Source Revenue		Anne Arundel County's Revenue Raising Effort Index
	($1884.16	/	$ 2146.04) x 100	=	87.80

Again, these calculations are done for each revenue source as well as for total revenue.

EMPIRICAL RESULTS

We wanted to explore descriptively the extent to which fiscal disparities exist among local jurisdictions within different kinds of metropolitan areas. This led us to structure a series of hypotheses. Our hypotheses were five in number:

1. that disparities in most metropolitan areas will be greater among suburban jurisdictions than between central city and suburbs;
2. that the greater the number of jurisdictions in a metropolitan area, the greater the extent of fiscal disparities;
3. that greater reliance on the predominant revenue source to the exclusion of a more diversified tax structure will result in greater fiscal disparities in the region;

4. that regions with higher metropolitan populations will exhibit greater fiscal disparity; and
5. that metropolitan areas where the central city revenue capacity greatly lagged suburban revenue capacity would have greater fiscal disparity overall.

The resource-expenditure challenges involved in employing the RRS method, led us to a process for sensitivity testing. We conducted a series of sensitivity tests to assess the comparability of the results of using alternative, less intensive, measures of revenue capacity and effort. Overall, our sensitivity analysis utilizes five different approaches. These include, to be explained in subsequent paragraphs, the "Expanded RRS," the "RRS General and Special Purpose Governments," the "RRS General Purpose Governments Only," the "RRS Large General Purpose Governments Only," and the "Per Capita Personal Income". The first four were based on hypothetical revenue capacity per capita indices, while the latter was based upon personal income per capita.

Before we could conduct our hypotheses and sensitivity testings, we followed the four-step RRS process, and estimated the revenue raising capacity and revenue raising effort for each local government within each of the metropolitan areas included here as case studies. Sample index values are presented in Table A-3 and Table A-4 in Appendix A. Full values appear in the case studies, Appendices B through G. Note that in this overview discussion, we include data for the Baltimore metropolitan area that is comparable to the other five jurisdictions, but in the case study we use more detailed data that is not comparable to the other five.

REVENUE RAISING CAPACITY

Table 7 provides summary data on revenue capacity indices calculated for local governments within each of the case study metropolitan areas. The data in Table 7 document substantial disparities in revenue capacity across local governments in all the case study metropolitan areas. The greatest variation is in metropolitan Miami, which exhibited significant variation with a coefficient of variation of 1.003. Next is Milwaukee with a coefficient of variation of 0.77.[32] Milwaukee is the most fragmented metropolitan area with 195 local governments – 94 general-purpose governments and 101 single purpose governments. Richmond, however, had the most counties at 16, more than double any of the other study areas. Were it to be more comparable to the other metropolitan areas as to county numbers, we might observe it dropping to the fewest level of local governments, a position presently occupied by the Las Vegas region with 24 units of government for this study. The coefficient of variation is 0.49 for the Richmond metropolitan area, and the San Francisco area is somewhat larger at 0.58. The coefficient of variation is .69 for metropolitan Baltimore. Local governments in the Las Vegas metropolitan region exhibit the least amount of disparity in revenue raising capacity with revenue capacity indices ranging from 118 to 69 and a coefficient of variation of only 0.18.

Table 7
Summary Statistics for Revenue Capacity Indices for The Six Metropolitan Areas

	Maximum	Minimum	Range	Standard Deviation	Mean	Coefficient of Variation
Baltimore MA	352	31	321	61	88	0.69
Las Vegas MA	118	69	48	18	100	0.18
Miami MA	852	50	803	194	193	1.003
Milwaukee MA	742	10	732	104	135	0.77
Richmond MA	161	26	135	36	74	0.49
San Francisco MA	328	30	298	76	133	0.58

HYPOTHESES TESTING

Looking at these summary results, we are interested in what factors might relate to such fiscal variation across metropolitan areas as measured by the coefficients of dispersion. We tested for a relationship to reliance on property tax, to metropolitan population levels, to number of local governments, and to a ratio of central city to suburban revenue capacity.

There is a connection for metropolitan areas that have greater population sizes, and the tendency to have greater variation in revenue raising capacity across local governments, as reflected in higher coefficients of variation. The correlation coefficient between the coefficient of variation for each metropolitan area and its population is 0.5149, indicating a relationship between high variation in revenue raising capacity as measured by the coefficient of variation and the size of the metropolitan area as measured by population. This suggests that more populated metropolitan areas have greater revenue raising capacity variation, or disparity.

We also find that as reliance on property tax increases, revenue raising capacity variation increases. The correlation coefficient between the coefficient of variation for each metropolitan area and its reliance on property tax is 0.5718, indicating a relationship between variation in revenue raising capacity and reliance on property tax. It seems that as reliance on property tax increases, the degree of revenue raising capacity variation, or disparity, increases.

Our other hypotheses tested through this process did not display relationships. For the six metropolitan areas in Table 7, the correlation coefficient between the number of local governments in the metropolitan area and the coefficient of variation is 0.2143 – indicating little to no relationship between the two. Similarly we found little to no relationship between fiscal disparity and a ratio of central city to suburban revenue capacity. The correlation coefficient was –0.2897.

SENSITIVITY TESTING

The ACIR developed the Representative Revenue System as a comprehensive approach to measuring the ability of governments to raise own-source revenues. However, because of its reliance on empirical tax base data, employing the RRS approach often poses significant challenges. Over the course of this project we found that there is significant variation across states in the availability of tax base data. In some cases the data required for the RRS were readily available, while in other cases the data were not available, not reported, not computerized or not formatted in a way that met the needs of the RRS. In particular, locating data for special purpose governments was often difficult, if not impossible to obtain.

Thus, because of the resource-expenditure challenges involved in employing the RRS method, we conducted a series of sensitivity tests to assess the comparability of the results of using alternative, less intensive, measures of revenue capacity and effort. Overall, our sensitivity analysis compares the results of five different approaches.

The first measure is referred to as the "Expanded RRS." This measure involves the employment of the RRS approach, while also measuring the revenue capacity and effort of all special purpose governments in the metropolitan area. The Expanded RRS approach was only employed in the Baltimore metropolitan area.

The second approach is referred to as the "RRS General and Special Purpose Governments." The RRS General and Special Purpose Governments measure is the approach relied upon throughout the paper. All general and special purpose governments are included, but special district revenues are collapsed into county totals for three of the metropolitan areas and are given their own aggregated line in three others (Baltimore MA, Las Vegas MA, and Richmond MA), and school districts are analyzed individually (except for the San Francisco Metropolitan Area where school districts are collapsed to county level districts).

The third method used is referred to as "RRS General Purpose Governments Only." In this measure, we use the RRS approach but only include general purpose governments in our analysis.

The fourth measure is the "RRS Large General Purpose Governments Only." For this measure we include all general purpose governments with populations over 25,000, but also all counties and independent cities regardless of population size to maintain the integrity of our metropolitan area geographies. We chose 25,000 as our population limit because, in general, jurisdictions with more than 25,000 people had tax base information readily available, while it was often difficult to collect tax and user charges base data in jurisdictions with less than 25,000 people.

Finally, the fifth measure that we used is "Per Capita Personal Income". Per capita income is a measure that often is used to gauge revenue capacity. The argument for using per capita income is that, since taxes are ultimately paid out of personal income, per capita personal income provides a good proxy of the ability of citizens to pay taxes, and, similarly, for local

governments to raise taxes. However, per capita personal income does not reflect the diversity of local tax policies, local revenue bases or the extent to which governments can export taxes to residents of other jurisdictions.

Table 8 presents summary statistics that were generated for each metropolitan area under each of the alternative measures of revenue capacity. The Baltimore, Miami, and San Francisco metropolitan areas hold true to the prediction that coefficients of variation will decline as the number of governments included in the analysis declines. This is what would be expected, and demonstrates that as we select out smaller jurisdictions and special districts, the remaining larger municipalities and counties exhibit more similarity. The metropolitan areas of Milwaukee, Richmond, and San Francisco stray slightly from this model, holding constant and then trending downward. The Las Vegas metropolitan area exhibits the reverse, with diversity increasing as numbers of governments decrease. This may be an artifact of there being only a very small number of governments in the last measure of large general purpose governments, one county and three municipalities. We also see in Table 8 that hypothetical revenues per capita decrease because the metropolitan area population remains the same as we subtract out local jurisdictions and, consequently, their contributions to the hypothetical capacity revenue total.

In addition, Table 8 documents the extent to which metropolitan areas differ in their variability to the alternative measures. The revenue capacity measures for the Las Vegas metropolitan area, which is the least fragmented metropolitan area in our study, have the least degree of variation under alternative measures, as the coefficients of variation only vary by 0.09 points. The Milwaukee area exhibits the largest range at .51 points, and the Baltimore metropolitan area at .47 points is next, when we exclude its case that is not comparable to the other five case studies (thus excluding the Expanded RRS version).

The coefficient of variation, which measures the dispersion of indices around the average, is 0.69 for the Baltimore metropolitan area, confirming some variation in revenue raising capacity. When we introduce the Baltimore metropolitan area special districts individually under the Expanded RRS method, a sensitivity test employed with the Baltimore case study only, the recalculated coefficient of variation is 1.13 for hypothetical capacity. This large jump in variability indicates that a significant degree of variability in revenue capacity is introduced by special district governments in the Baltimore metropolitan area. For revenue effort, the Baltimore metropolitan area shifts from .73 to 1.41, when introducing special districts, and this, then, also implies substantial additional variation across special districts' revenue efforts. The coefficient of variation drops significantly in the Baltimore metropolitan area, to .22, when the analysis is limited to large general purpose governments, indicating that there is a strong degree of variation among smaller suburban communities in Baltimore while counties and larger cities are not as dissimilar.

In the Baltimore, Miami, Milwaukee, and Richmond metropolitan areas, the Per Capita Personal Income for General Purpose Governments Only measure does not capture the degree of variability in revenue capacity of its peer RRS measure, Hypothetical Capacity per Capita for General Purpose Governments Only. Only for Las Vegas and San Francisco areas does the former capture the coefficient of variation of the latter. There are no obvious reasons to suggest why this is so.

Table 8
Summary Statistics for Revenue Capacity Indices Using Alternative Measures

Metropolitan Area	Statistics	Expanded RRS Hypothetical Capacity per Capita for General and Special Purpose Governments (individually ranked)	RRS Hypothetical Capacity per Capita for General and Special Purpose Governments	RRS Hypothetical Capacity per Capita for General Purpose Governments Only	RRS Hypothetical Capacity per Capita for Large General Purpose Governments Only	Per Capita Personal Income for General Purpose Governments Only	Range of Coefficients of Variation
Baltimore	Maximum	352	352	351	144	141	
	Minimum	0	31	31	59	46	
	Range	352	321	321	85	96	
	S.D.	65	61	61	27	21	
	Mean	58	88	90	109	93	
	C.V.	1.13	0.69	0.67	0.24	0.22	**0.47**
	Revenue per capita		$1,779	$1,763	$1,748		
Las Vegas	Maximum		118	118	118	137	
	Minimum		69	69	69	74	
	Range		48	50	49	63	
	S.D.		18	21	25	22	
	Mean		100	98	93	105	
	C.V.		0.18	0.21	0.27	0.21	**0.09**
	Revenue per capita		$1,831	$1,305	$1,199		
Miami	Maximum		852	708	289	449	
	Minimum		50	51	56	0	
	Range		803	657	233	449	
	S.D.		194	172	93	102	
	Mean		193	188	134	141	
	C.V.		1.003	0.92	0.69	0.72	**0.31**
	Revenue per capita		$1,837	$1,291	$1,233		
Milwaukee	Maximum		742	686	142	403	
	Minimum		10	44	50	69	
	Range		732	642	92	334	
	S.D.		104	112	28	67	
	Mean		135	143	104	129	
	C.V.		0.77	0.78	0.27	0.52	**0.51**
	Revenue per capita		$1,840	$976	$757		
Richmond	Maximum		161	163	164	127	
	Minimum		26	25	64	64	

	Range		135	138	99	63	
	S.D.		36	37	28	17	
	Mean		74	73	94	88	
	C.V.		0.49	0.50	0.30	0.19	**0.31**
	Revenue per capita		$1666	$1624	$1613		
San Francisco	Maximum		328	313	167	307	
	Minimum		30	31	31	38	
	Range		298	282	136	270	
	S.D.		76	72	33	75	
	Mean		133	135	92	137	
	C.V.		0.58	0.54	0.36	0.55	**0.22**
	Revenue per capita		$2,578	$1,864	$1,771		

Table 9 displays the correlation coefficients between the revenue capacity index values generated by the alternative measures. As the table depicts, there is a strong correlation between the index values generated by all of the RRS measures. The high correlation coefficients between RRS measures that are displayed in Table 9 indicate that there is not a large difference in the capacity indices generated from the different RRS approaches. In fact, the lowest correlation coefficient that we see between the alternative RRS measures is .963, a value that occurs between the RRS Hypothetical Capacity per Capita for General and Special Purpose Governments measure and the RRS Hypothetical Capacity per Capita for General Purpose Governments Only measure in the Las Vegas metropolitan area. The General Purpose Governments Only measure does not capture all of the variation that occurs in the Las Vegas metropolitan area, but the relationship is still strong. In other words, the revenue capacity indices for large general purpose governments within a metropolitan area do not change significantly when single purpose governments and small general purpose governments are omitted from the analysis.

Per capita income is not at all as well correlated to the RRS alternative measures as the RRS measures are to one another. The Baltimore metropolitan area has the weakest relationship between Per Capita Income index values and the Expanded, Full and General Purpose RRS hypothetical capacity per capita index values. The strongest relationship between the personal income per capita index and the hypothetical capacity per capita index occurs in the Las Vegas and San Francisco metropolitan areas, while in the Miami, Milwaukee and Richmond metropolitan areas there is a weaker relationship that exists across all RRS hypothetical capacity per capita index measures when correlated to the personal income per capita index measure.

Table 9
Correlation Coefficients Between Revenue Raising Capacity Indices Generated by Alternative Measures

Baltimore	**Expanded RRS**	**RRS Hypothetical Capacity per Capita for General and Special Purpose Governments**	**RRS Hypothetical Capacity per Capita for General Purpose Governments Only**	**RRS Hypothetical Capacity per Capita for Large General Purpose Governments Only**

Expanded RRS				
All RRS	1.000000			
RRS General Purpose Only	0.999995	0.999995		
RRS Large General Purpose	0.999983	0.999983	0.999997	
Per Capita Income	0.263852	0.263852	0.251577	0.978586
Las Vegas		**All RRS**	**RRS General Purpose**	**RRS Large General Purpose**
All RRS				
RRS General Purpose Only		0.962901		
RRS Large General Purpose		0.998133	0.999978	
Per Capita Income		0.882958	0.959587	0.967876
Miami		**All RRS**	**RRS General Purpose**	**RRS Large General Purpose**
All RRS				
RRS General Purpose Only		0.996641		
RRS Large General Purpose		0.999817	1.000000	
Per Capita Income		0.637919	0.698841	0.992942
Milwaukee		**All RRS**	**RRS General Purpose**	**RRS Large General Purpose**
All RRS				
RRS General Purpose Only		0.997890		
RRS Large General Purpose		0.993307	1.000000	
Per Capita Income		0.718491	0.558321	0.558321
Richmond		**All RRS**	**RRS General Purpose**	**RRS Large General Purpose**
All RRS				
RRS General Purpose Only		0.999953		
RRS Large General Purpose		0.999927	1.000000	
Per Capita Income		0.565926	0.557887	0.687851
San Francisco		**All RRS**	**RRS General Purpose**	**RRS Large General Purpose**
All RRS				
RRS General Purpose Only		0.996566		
RRS Large General Purpose		0.992484	0.999938	
Per Capita Income		0.921249	0.925546	0.733809

It is clear that most of the RRS measures of revenue raising capacity result in different indices for large general purpose governments when compared with the per capita income measure of revenue capacity, and the differences are substantial in some metropolitan areas. As we successively reduce the number of local governments across our three alternative RRS measures, per capita personal income becomes a better proxy for our hypothetical revenue

capacity diversity in three of the metropolitan areas, but worsening in the Milwaukee and San Francisco areas and becoming only marginally better in the Richmond area.

However, Table 9 demonstrates that Per Capita Personal Income is only accurate for some county and county-equivalent metropolitan area cases when compared to Per Capita Hypothetical Collections, and we have not yet been able to distinguish accurate from inaccurate metropolitan applications. Researchers using Per Capita Income currently have no mechanism to weed inaccurate application cases from those that will be accurate. Furthermore, Table 8 clearly indicates that a significant degree of nuance is lost when special purpose or smaller jurisdictions are excluded from the analysis, as for the county, county-equivalent independent cities, and largest cities.

We conclude from our series of sensitivity tests to assess the comparability of the results of using alternative, less intensive, measures of revenue capacity and effort that Per Capita Personal Income is not a satisfactory shortcut for the RRS method. The best we can suggest, and it is not insignificant, is that very satisfactory correlations are obtained between our second-most intensive method and our least intensive, that of metropolitan areas constructed through use of only the counties, county-equivalent independent cities, and largest cities, thus those jurisdictions where the resource-expenditure challenge is less onerous.

Nor can we recommend use of our most intensive method. It had a near perfect correlation with our second most intensive method, meaning our second most intensive method is a good substitute and our most intensive method required extensive work to locate the needed special district data. The state of Maryland would have had to engage in time-consuming efforts to generate some of our needed data. In other cases, the nearly-volunteer status of other special districts made it hard for them to locate and transmit the data. What we lose by our less intensive method, however, is the significant decrease in inequities that appears through our most intensive method, as shown by the near-halving of the coefficient of variation. In metropolitan areas where there are many special districts, great disparities may be masked by exclusion of special districts. In those metropolitan areas where the special districts handle many of the otherwise municipal and county responsibilities, those disparities could translate into services disparities.

REVENUE RAISING EFFORT

A jurisdiction's revenue effort is calculated by comparing the hypothetical amount a jurisdiction could raise if it taxed all bases at their average rate and how much they actually collect. A high effort index means that a local government is raising more revenues than it would if it just taxed each base at the metropolitan wide average tax rate. For example, in the Richmond metropolitan area, Port Royal Town has a revenue effort index of 368, which means the local government actually collects more than three times what it would collect if it taxed each base at the metropolitan wide average rate. In part, that is because the town has a very low revenue capacity – with an index of just 31 – but relatively high revenue effort per capita collection -- $1,888.

Alternatively, jurisdictions with low revenue effort measures are collecting less revenue than they would if they taxed all bases as their metropolitan wide average tax rates. For example, in metropolitan San Francisco, Atherton Town has an effort index of just 7.84 while Woodside town has an index of just 6.56. These are two extremely wealthy jurisdictions, which can generate substantial revenues with relatively low tax rates.

Table 10 provides summary statistics for revenue effort indices for local governments in the six metropolitan areas. The data in Table 10 document the substantial disparities in revenue effort across local jurisdictions within each of our case study metropolitan areas. In fact, in all jurisdictions but Las Vegas, the coefficients of variation for revenue effort indices are higher for each metropolitan area than the corresponding coefficient of variation for revenue capacity indices. This is because the effort measure reflects actual decisions to raise revenues and local public policies, while the revenue capacity measure merely looks at hypothetical revenues given average tax rates and actual tax bases. It suggests that, on average, low capacity jurisdictions tend to exhibit somewhat greater revenue effort while wealthier jurisdictions can raise sufficient revenues with lesser effort, e.g. below average tax rates.

Table 10
Summary Statistics for Revenue Effort Indices for the Six Metropolitan Areas

	Maximum	Minimum	Range	Standard Deviation	Mean	Coefficient of Variation
Baltimore MA	137	2	135	35	48	0.73
Las Vegas MA	76	22	53	19	43	0.45
Miami MA	217	10	206	41	46	0.89
Milwaukee MA	512	2	510	50	43	1.16
Richmond MA	368	28	343	75	106	0.71
San Francisco MA	273	7	267	53	47	1.13

So far the data have documented the rather significant variation in revenue raising capacity and revenue effort across local governments in each of our case study metropolitan areas. There is greater variation in revenue effort than revenue capacity reflecting the need of jurisdictions with limited tax bases to impose tax rates that are generally above the metropolitan wide average rates. The extent of variation, however, differs across our six case study metropolitan areas.

Table 11 presents the correlation coefficients between the revenue capacity and revenue effort indices in each metropolitan area. As would be expected, there is a negative relationship between fiscal capacity and fiscal effort indices. This indicates that jurisdictions with lower than average revenue capacity exhibit a higher degree of revenue effort to raise regionally comparable revenues. The Richmond and Las Vegas metropolitan areas have stronger inverse relationships between fiscal capacity and fiscal effort indices, as their correlation coefficients are –0.457 and –0.466 respectively. The four remaining metropolitan areas have correlation coefficients that

range between –0.172 and –0.289, indicating jurisdictions with significantly lower than average revenue capacity are not expressing a significantly higher degree of revenue effort.

Table 11
Correlation Coefficients Between Indices of
RRS Revenue Raising Capacity and RRS Revenue Effort

	Correlation Coefficient
Baltimore MA	-0.172
Las Vegas MA	-0.457
Miami MA	-0.225
Milwaukee MA	-0.276
Richmond MA	-0.466
San Francisco MA	-0.289

Central City vs. Suburban Disparities

Another issue of concern is how the central city in each metropolitan area compares with its suburban jurisdictions in terms of both revenue capacity and revenue effort. Summary data for the central city in each of the six metropolitan areas examined are reported in Table 12. The data indicate that the central city in each of the six metropolitan areas has a revenue capacity below the metropolitan wide average – substantially below the average in Baltimore where the City of Baltimore has a revenue capacity just 59 % of the metropolitan average. San Francisco comes closest to the metropolitan average with a revenue capacity index of 94, and Las Vegas and Miami are close. The traditional older manufacturing cities of Baltimore and Milwaukee share status for the lowest revenue capacity index at 59, followed by Richmond which falls in the mid-range of the group. As we move to the top, the two western sunbelt cities of Las Vegas and San Francisco predominate. Older manufacturing-legacy core cities lag their sunbelt counterparts in revenue raising capacity because they tend now to have relatively poorer tax bases.

Table 12
Revenue Capacity and Effort Indices for
Central Cities in the Six Metropolitan Areas
(Metropolitan Average = 100)

	Revenue Capacity Index	Revenue Effort Index
Baltimore Independent City	59	137
Las Vegas City	90	33
Miami City-County	88	44
Milwaukee City	59	61
Richmond Independent City	79	232
San Francisco City-County	94	113

One jurisdiction, Baltimore, with a low revenue raising capacity, taxes its revenue bases at rates above the metropolitan wide average rate. Baltimore City collects 37% more revenue than it would if it taxed all bases at their average metropolitan wide tax rate. The City of Richmond has actual revenue collections that are 133 % greater than if it taxed all bases at the metropolitan wide average rate, though its revenue raising ability compared to the other local governments in its area was better than Baltimore's. This suggests that Richmond simply has to access revenue sources much more intensively than its suburban counties. In fact, many of Richmond's suburban counties are more rural in population size than urban, as 13 of the 16 counties have populations under 25,000. There may not be the demand for urban services that there is in Richmond.

The City of Milwaukee has revenue capacities below its metropolitan average at 59, but a revenue effort at 61 that is below what would be expected, given its revenue capacity measure. Compare this 61 to Baltimore's 137. Milwaukee is not accessing revenue sources at anywhere near the metropolitan average, indicating that it does not need to conduct a high revenue raising effort. Perhaps special or school districts take on municipal roles that would otherwise fall to the City of Richmond. The City of Las Vegas likewise has a low revenue effort index, and special districts have active roles in that metropolitan area.

Suburban potential revenue raising capacity outstripped their core cities' hypothetical capacity, on average, because of substantial variation across suburban areas. Many individual suburban jurisdictions were below the marks set by their core cities. All core cities, however, exhibit indices below the metropolitan average, as shown by Table 13. Suburban indices are computed treating the suburban jurisdictions as one common entity shorn of the core city.

Table 13
Central City – Suburban Revenue Capacity per Capita and Index
(Metropolitan Average = 100)

	Core City Revenue Capacity per Capita	Suburban Counties' Revenue Capacity per Capita	Core City Revenue Capacity Index	Suburban Counties' Revenue Capacity Index	Number of Suburban Counties and Independent Cities
Baltimore	$1055	$2028	59	114	6
Las Vegas	$1655	$1924	90	105	1
Miami	$1619	$1879	88	102	1
Milwaukee	$1081	$2341	59	127	4
Richmond	$1318	$1743	79	122	16 + 3
San Francisco	$2429	$2818	94	109	2

As Table 14 indicates, core cities exceeded their suburban counties' revenue raising effort indices in four of six instances, demonstrating that, typically, low capacity jurisdictions tend to make somewhat greater revenue effort while higher capacity, wealthier jurisdictions need lesser effort to raise sufficient revenues with below average tax rates and user charges percents. The cities of Las Vegas and Miami did not exceed their counties' effort, indicating they have a higher ability to raise revenues, therefore needing to apply smaller revenue rates to raise necessary money than their counterparts.

Table 14
Central City to Suburban Revenue Effort per Capital and Index
(Metropolitan Average = 100)

	Core City Revenue Effort per Capita	Suburban Counties' Revenue Effort per Capita	Core City Revenue Effort Index	Suburban Counties' Revenue Effort Index	Number of Suburban Counties and Independent Cities
Baltimore	$1445	$1833	137	90	6
Las Vegas	$553	$1104	33	57	1
Miami	$709	$2054	44	109	1
Milwaukee	$659	$236	61	10	4
Richmond	$3055	$1295	232	74	16 + 3
San Francisco	$2748	$333	113	12	2

CONCLUSION

The purpose of this project has been to use the Representative Revenue System approach to measuring revenue raising disparities created by the Advisory Commission on Intergovernmental Relations. We applied that methodology to computing revenue raising and effort measures for local governments within six metropolitan areas – Baltimore, Las Vegas, Miami, Milwaukee, Richmond and San Francisco.

The results of the analysis indicate that:

- There are disparities, sometimes substantial, in revenue raising capacity across local governments in each of the six study areas;
- Special districts can contribute substantial additional variability in hypothetical revenues;
- The revenue capacity of the central city in each metropolitan area is below the metropolitan wide average, with the greatest disparities occurring in the older metropolitan areas of the East coast – Baltimore and Richmond, and in the old manufacturing cities of the Midwest – Milwaukee;
- These are the same cities for which the Representative Revenue System approach to measuring revenue raising capacity results in substantially different conclusions about

capacity and disparities in capacity compared to per capita personal income being used as a measure of revenue capacity;

- Per capita income presently is not a satisfactory substitute for per capital hypothetical capacity. In only three of six case studies and only when applied to the crudest of our case study analyses did we achieve stronger correlations.
- The differences between the two measures of revenue capacity are the greatest for the older cities in the East and the high correlation coefficients for the cities of Las Vegas and San Francisco in the faster growing West indicate a closer linkage between the two measures of revenue capacity;
- Jurisdictions with lower revenue raising capacity tend to be somewhat more likely to tax their bases at rates above the metropolitan wide average while jurisdictions with above average capacity tend to tax at rates lower than the metropolitan wide average;
- Metropolitan areas that are larger in population tend to have greater disparity in revenue raising capacity across local governments than metropolitan areas with fewer local governments;
- As reliance on property tax increases, revenue raising capacity variation increases. The more that metropolitan areas in our study rely on the property tax, the greater the revenue raising capacity disparity within their region.

The disparities in revenue raising capacity across local governments in each of the metropolitan areas examined here suggest that a number of local governments will have difficulty finding own-source revenues sufficient to provide the level and quality of services demanded by their citizens. In those cases where this holds true, more needs to be done to ameliorate the consequences of these documented disparities in revenue raising capacity and need.

This requires states to improve the ability of individual governments to obtain access to the resources they need to provide the level and quality of services demanded by their citizens. One approach might be to increase general state aid to local governments with the allocation being based on a revenue raising capacity and effort measure. Tennessee does this for education funding. States might reduce local government reliance on the property tax. Another might be to improve the professionalism of local government management through requirements for town and city manager forms of government, adequate professional training facilities for government officials, and more stringent accounting requirements as North Carolina has implemented. Introducing more efficiencies will ease the need for increasing revenue effort. Alternatively, one might pursue some sort of metropolitan wide tax base sharing like the model in place in Minneapolis/St. Paul.

APPENDIX A

The purpose of this research is to calculate the revenue raising capacity and effort of individual local governments within the metropolitan areas of six case studies: Baltimore, Las Vegas, Miami, Milwaukee, Richmond, and San Francisco. The framework for conducting the study is the Representative Revenue System (RRS) developed by the U.S. Advisory Commission on Intergovernmental Relations.

The U.S. Advisory Commission on Intergovernmental Relations (ACIR) had a longstanding interest in measuring the revenue raising capacity and effort of state and local governments. Their first approach for measuring state and local revenue raising capacity and effort was the Representative Tax System.[33] ACIR subsequently expanded that approach to include non-tax revenues. This is referred to as it the Representative Revenue System (RRS). As applied to the 50 states by ACIR, the RRS includes 28 taxes and 3 non-tax sources of revenue. These are detailed in Table A-1.

Table A-1
Revenue Sources Included in ACIR Representative Revenue System

Sales Taxes	**License Taxes**	**Other Taxes**	**Non-tax Revenues**
General Sales Taxes	Vehicle Operator	Personal Income Taxes	Rents and Royalties
Gross Receipts Taxes	Corporation	Corporate Income Taxes	Lotteries
Selective Sales Taxes:	Hunting and Fishing	Property Taxes	User Charges
Pari-mutuel	Alcoholic Beverages	Residential	
Motor Fuel	Automobile	Farm	
Insurance	Truck	Commercial/Industrial	
Tobacco		Public Utilities	
Amusement		Estate and Gift Taxes	
Public Utilities		Severance Taxes	
Distilled Spirits		Oil and Gas	
Beer		Coal	
Wine		Nonfuel Minerals	
		Other Taxes	

Source: Advisory Commission on Intergovernmental Relations, *RTS 1991, State Revenue Capacity and Effort,* Washington, DC, September 1993, Table 1, p. 7.

Table A-2 lists the jurisdictions included in this study.

Table A-2
Metropolitan Areas and Their Local Governments Included in This Study

Name	Statistical Area Definition	Legal Components	U.S. Census 2000 Population34
Baltimore-Towson, MD	Metropolitan Statistical Area	Counties of Anne Arundel, Baltimore City, Carroll, Harford, Howard, Queen Annes; and independent city of Baltimore	2,552,994
Las Vegas-Paradise, NV	Metropolitan Statistical Area	Clark County, NV	1,375,765
Miami-Miami Beach-Kendall, FL	Metropolitan Division	Miami-Dade County, FL	2,253,362
Milwaukee-Waukesha-West Allis, WI	Metropolitan Statistical Area	Counties of Milwaukee, Ozaukee, Washington, and Waukesha	1,500,741
Richmond, VA	Metropolitan Statistical Area	Counties of Amelia, Caroline, Charles City, Chesterfield, Cumberland, Dinwiddie, Goochland, Hanover, Henrico, King and Queen, King William, Louisa, New Kent, Powhatan, Prince George, Sussex; and independent cities of Colonial Heights, Hopewell, Petersburg, and Richmond	1,096,957
San Francisco-San Mateo-Redwood, City, CA	Metropolitan Division	Counties of Marin, San Mateo, and San Francisco	1,731,183

We use Census of Government data for local revenues in this study. The Census data file is extensive and includes categories of revenue sources that were not utilized in this research.

Because we focus on local governments, a number of adjustments were made to these categories so they reflect activities of local governments only. See Table A-3 for the description of adjustments.

Table A-3

Moving from Census File to Work File

The following are the adjustments made to the Census file in order to arrive at our work file:

1. In the category of user charges, we omitted the following items:
   - **Charges for higher education, charges for hospitals, charges for toll highways and charges for natural resources** because these are typically considered a state- or county-level responsibility.
   - **Charges for air transportation** because municipalities are typically served by regional airports and they do not have the option to open an airport in their community.
   - **Charges for miscellaneous commercial activity** because we were unable to determine the source or base of miscellaneous charges.
   - **All other charges not elsewhere classified (NEC)** because it is impossible to break out non-classified charges.
2. All **license taxes** including **total license taxes, alcoholic beverage licenses, corporation licenses, motor vehicle licenses, motor vehicle operators licenses, occupational and business licenses and other license taxes** were omitted because license taxes are typically a one-time fee and we therefore did not consider them to be a policy variable.
3. **Corporate income tax, motor fuels tax, alcoholic beverage tax, tobacco tax, death and gift taxes, estate and gift taxes, document & stock transfer taxes, taxes not elsewhere classified (NEC), severance taxes, and all license taxes** were omitted because revenue from these sources is primarily collected by the state.
4. All **intergovernmental revenue** from federal, state and local governments was omitted because funds received from other governmental entities do not reflect the economic base from which local governments raise revenue.
5. **Miscellaneous general revenues** were also completely omitted for our purposes. The category included:
   - **Special assessments** which are compulsory payments from property owners who benefit from specific public improvements, and impact fees to fund the extension of water, sewer, roads, and other such infrastructure for new developments.[35]. Consideration was given to including this revenue source as part of property tax revenue or user charges; for example, revenue from impact fees would have been allotted under user charges. However, a breakdown of the different revenue sources under special assessments was not available; therefore, it was not possible to apportion the different revenue sources accurately.
   - **Property sales and housing and community development revenue** which are periodic and driven by a number of factors that do not reflect the ability of local governments to raise own-source revenues to meet annual operating expenses
   - **Interest revenue, fines and forfeitures, and rents and royalties,** which reflect

cash management practices, not ongoing revenue sources that reflect differences in economic circumstances across local governments.

- **Net lottery revenue and liquor store revenue** because lottery revenue and liquor store revenue typically go to the state.
- **Miscellaneous general revenues, NEC** are omitted because they do not reflect economic differences across local governments that would impact their abilities to generate own-source revenues. Payments in lieu of taxes (PILOTS) could be categorized as a user charge, but the Census does not provide a detailed breakdown of the revenue sources in this category. Therefore it is not possible to apportion the correct amount of revenue received from PILOTS to the user charges category.

6. **All insurance trust revenue, all employee retirement revenue and all unemployment revenue** were also omitted because these reflect interest earnings and not local own source revenue-raising capacity.

Table A-4 summarizes the revenue raising capacity measures generated by the ACIR Representative Revenue System.

Table A-4
Revenue Raising Capacity of
Selected Local Governments in Six Metropolitan Areas, FY2002

BALTIMORE		LAS VEGAS		MIAMI	
Local Jurisdictions	**Index**	**Local Jurisdictions**	**Index**	**Local Jurisdictions**	**Index**
Aberdeen City	61.02	Boulder City	117.13	Aventura City	283.03
Annapolis City	51.94	Henderson City	117.81	Bal Harbour Village	551.38
Anne Arundel County	120.60	Las Vegas City	90.42	Bay Harbor Islands Town	157.30
Baltimore City	59.27	Mesquite City	105.83	Biscayne Park Village	97.63
Baltimore County	104.33	North Las Vegas City	69.48	Coral Gables City	298.24
Barclay Town	102.19	School District	100.00	Dade County	100.00
Bel Air Town	87.40			El Portal Village	67.36
Carroll County	105.56			Florida City	53.19
Centreville Town	352.13			Golden Beach Town	628.00
Church Hill Town	46.56			Hialeah City	61.55
Hampstead Town	59.33			Hialeah Gardens City	72.61
Harford County	101.88			Homestead City	55.36
Havre De Grace City	57.85			Key Biscayne City	460.51

Highland Beach Town	112.48			Medley Town	852.04
Howard County	143.79			Miami Beach City	206.40
Manchester Town	57.42			Miami City	88.15
Mt Airy Town	92.08			Miami Shores City	121.36
New Windsor Town	62.79			Miami Springs City	113.75
Queen Annes County	126.18			Miami-Dade Co Public Sch Dist	83.20
Queenstown Town	112.74			North Bay Village	100.68
Sudlersville Town	71.45			North Miami Beach City	80.10
Sykesville Town	53.52			North Miami City	62.82
Taneytown City	55.88			Opa-Locka City	57.78
Templeville Town	30.99			Pinecrest City	273.33
Union Bridge Town	56.69			South Miami City	149.87
Westminster City	65.03			Sunny Isles Beach City	222.95
				Surfside Town	244.63
				Sweetwater City	49.53
				Virginia Gardens Village	118.00
				West Miami City	85.95
Hypothetical Collections Per Capita All Jurisdictions	**$1,779.49**		**$ 1,830.77**		**$1,837.20**

Table A-4
(Continued)

MILWAUKEE		RICHMOND		SAN FRANSCISCO	
Local Jurisdictions	**Index**	**Local Jurisdictions**	**Index**	**Local Jurisdictions**	**Index**
Arrowhead Unif High Sch Dist	132.48	Amelia County	78.51	Atherton Town	328.02
Bayside Village	195.26	Ashland Town	29.40	Belmont City	100.63
Belgium Village	122.41	Bowling Green Town	36.39	Belvedere City	303.84
Big Bend Village	120.55	Caroline County	81.01	Brisbane City	199.20
Brookfield City	70.60	Charles City County	85.27	Burlingame City	129.08
Brown Deer Sch Dist	99.15	Chesterfield County	104.96	Colma Town	128.58
Brown Deer Village	108.68	Colonial Heights City	107.36	Corte Madera Town	128.03

Butler Village	147.19	Cumberland County	70.83	Daly City	47.21
Cedarburg City	83.63	Dinwiddie County	77.88	East Palo Alto City	29.76
Cedarburg Sch Dist	105.16	Goochland County	153.75	Fairfax Town	79.35
Chenequa Village	742.00	Hanover County	121.26	Foster City	63.04
Cudahy City	80.43	Henrico County	114.00	Half Moon Bay City	92.79
Cudahy Sch Dist	64.04	Hopewell City	73.20	Hillsborough Town	270.04
Delafield City	217.54	King And Queen County	77.19	Larkspur City	131.24
Dousman Village	82.08	King William County	90.79	Marin County	108.96
Eagle Village	193.09	Louisa County	161.42	Marin County Schools	76.16
Elm Grove Village	192.90	Louisa Town	30.86	Menlo Park City	165.58
Elmbrook Sch Dist	164.69	Mckenney Town	32.93	Mill Valley City	150.30
Erin Sch Dist 2	134.52	Mineral Town	34.88	Millbrae City	82.31
Fox Point J2	104.88	New Kent County	103.07	Novato City	88.01
Fox Point Village	174.13	Petersburg City	64.29	Pacifica City	64.90
Franklin City	119.82	Port Royal Town	30.77	Portola Valley Town	257.11
Franklin Sch Dist	96.26	Powhatan County	88.46	Redwood City	101.17
Fredonia Village	91.22	Prince George County	71.16	Ross Town	197.61
Friess Lake Sch Dist	133.45	Richmond City	79.09	San Anselmo Town	97.22
Germantown Sch Dist	117.95	Stoney Creek Town	44.94	San Bruno City	67.30
Germantown Village	32.16	Sussex County	64.38	San Carlos City	126.00
Glendale City	164.55	Wakefield Town	26.82	San Francisco City And County	94.22
Glendale River Hills Sch Dist	145.05	Waverly Town	26.49	San Francisco Unif Sch Dist	45.25
Grafton Sch Dist	117.49	West Point Town	51.74	San Mateo City	96.46
Grafton Village	71.79			San Mateo County	107.74
Greendale Sch Dist	112.30			San Mateo County Schools	66.93
Greendale Village	127.37			San Rafael City	96.11
Greenfield City	92.34			Sausalito City	201.12
Greenfield Sch Dist	86.51			South San Francisco City	93.64
Hales Corners Village	98.69			Tiburon Town	215.74
Hamilton Sch Dist	101.36			Woodside Town	274.50
Hartford City	55.36				
Hartford Jt Sch Dist 1	87.32				

Hartford U H Sch Dist	85.71				
Hartland Village	132.62				
Hartland-Lakeside Jt Sd 3	122.70				
Jackson Village	89.74				
Kettle Moraine Sch Dist	132.13				
Kewaskum Sch Dist	91.04				
Kewaskum Village	57.29				
Lac La Belle Village	326.57				
Lake Country Sch Dist	172.11				
Lannon Village	122.28				
Maple Dale-Indian Hill	550.18				
Menomonee Falls Sch Dist	121.00				
Menomonee Falls Village	127.85				
Mequon City	214.64				
Mequon-Theinsville Sch Dst	170.49				
Merton Community Sch Dist	112.41				
Merton Village	658.36				
Milwaukee City	58.77				
Milwaukee City Sch Dist	50.31				
Milwaukee County	77.55				
Mukwonago Sch Dist	112.47				
Mukwonago Village	126.55				
Muskego City	125.60				
Muskego-Norway Sch Dist	99.17				
Nashotah Village	141.41				
New Berlin City	131.36				
New Berlin Sch Dist 14	116.61				
Newburg Village	79.17				
Nicolet Uhs Dist	144.30				
Norris Sch Dist	23.81				
North Lake Sch Dist	146.62				
North Prairie Village	128.89				
Northern Ozaukee Sch Dist	9.61				
Oak Creek City	112.33				
Oak Creek-Franklin Sch Dist	100.91				

Oconomowoc Area Sch Dist	138.17				
Oconomowoc City	109.91				
Oconomowoc Lake Village	439.41				
Ozaukee County	142.61				
Pewaukee City	218.14				
Pewaukee Sch Dist	136.10				
Pewaukee Village	121.00				
Port Washington City	42.87				
Port Washington-Saukville Sch Dist	87.97				
Richfield J1 Dist	122.72				
Richmond Sch Dist	111.61				
River Hills Village	355.33				
Saukville Village	71.42				
Shorewood Sch Dist	115.67				
Shorewood Village	130.77				
Slinger Sch Dist	105.75				
Slinger Village	97.56				
South Milwaukee City	70.63				
South Milwaukee Sch Dist	65.42				
St Francis City	79.88				
St Francis City Sch Dist 6	69.68				
Stone Bank Sch Dist	199.51				
Sussex Village	118.47				
Swallow Sch Dist	223.08				
Thienville Village	121.29				
Wales Village	99.19				
Washington County	119.47				
Waukesha City	40.71				
Waukesha County	142.43				
Waukesha Sch Dist	104.24				
Wauwatosa City	112.87				
Wauwatosa Sch Dist	116.78				
West Allis City	82.62				
West Allis Sch Dist	73.38				
West Bend City	103.57				
West Bend Joint Sch Dist 1	89.33				
West Milwaukee Village	76.40				
Whitefish Bay Sch Dist	159.61				
Whitefish Bay Village	174.63				

Whitnall Sch Dist	96.41				
Hypothetical Collections Per Capita All Jurisdictions	**$1839.79**		**$1666.34**		**$2,577.89**

Table A-5
Revenue Raising Effort of Selected Local Governments in Six Metropolitan Areas, FY2002

BALTIMORE		LAS VEGAS		MIAMI	
Local Jurisdictions	**Index**	**Local Jurisdictions**	**Index**	**Local Jurisdictions**	**Index**
Aberdeen City	42.98	Boulder City	57.36	Aventura City	32.92
Annapolis City	101.55	Henderson City	37.05	Bal Harbour Village	19.24
Anne Arundel County	87.80	Las Vegas City	33.41	Bay Harbor Islands Town	32.91
Baltimore City	137.00	Mesquite City	34.22	Biscayne Park Village	47.40
Baltimore County	95.47	North Las Vegas City	75.56	Coral Gables City	28.29
Barclay Town	2.31	School District	22.43	Dade County	47.92
Bel Air Town	39.83			El Portal Village	23.32
Carroll County	79.40			Florida City	52.01
Centreville Town	19.76			Golden Beach Town	22.58
Church Hill Town	31.65			Hialeah City	52.72
Hampstead Town	24.61			Hialeah Gardens City	25.20
Harford County	88.97			Homestead City	137.08
Havre De Grace City	57.38			Key Biscayne City	13.26
Highland Beach Town	22.00			Medley Town	61.28
Howard County	90.29			Miami Beach City	55.74
Manchester Town	50.68			Miami City	43.75
Mt Airy Town	20.95			Miami Shores City	31.90
New Windsor Town	19.92			Miami Springs City	51.22
Queen Annes County	84.75			Miami-Dade Co Public Sch Dist	216.63

Queenstown Town	31.27			North Bay Village	36.37
Sudlersville Town	22.53			North Miami Beach City	67.93
Sykesville Town	15.51			North Miami City	49.47
Taneytown City	36.71			Opa-Locka City	87.32
Templeville Town	11.33			Pinecrest City	10.94
Union Bridge Town	42.10			South Miami City	25.91
Westminster City	47.05			Sunny Isles Beach City	10.17
				Surfside Town	29.50
				Sweetwater City	17.51
				Virginia Gardens Village	15.68
				West Miami City	36.54
Actual Collections Per Capita All Jurisdictions	**$1,779.49**		**$1,830.77**		**$1,837.20**

Table A-5
(Continued)

MILWAUKEE		RICHMOND		SAN FRANCISCO	
Local Jurisdictions	**Index**	**Local Jurisdictions**	**Index**	**Local Jurisdictions**	**Index**
Arrowhead Unif High Sch Dist	18.93	Amelia County	44.54	Atherton Town	7.84
Bayside Village	21.59	Ashland Town	65.46	Belmont City	36.71
Belgium Village	28.92	Bowling Green Town	170.18	Belvedere City	17.59
Big Bend Village	26.04	Caroline County	54.05	Brisbane City	71.15
Brookfield City	73.37	Charles City County	81.49	Burlingame City	50.60
Brown Deer Sch Dist	47.54	Chesterfield County	75.23	Colma Town	207.96
Brown Deer Village	32.71	Colonial Heights City	105.16	Corte Madera Town	44.43
Butler Village	49.30	Cumberland County	56.46	Daly City	51.36

Cedarburg City	99.36	Dinwiddie County	66.33	East Palo Alto City	48.61
Cedarburg Sch Dist	44.65	Goochland County	67.68	Fairfax Town	23.82
Chenequa Village	16.21	Hanover County	71.24	Foster City	92.62
Cudahy City	41.31	Henrico County	78.95	Half Moon Bay City	33.84
Cudahy Sch Dist	44.80	Hopewell City	147.79	Hillsborough Town	22.30
Delafield City	19.14	King And Queen County	85.04	Larkspur City	20.91
Dousman Village	41.14	King William County	61.21	Marin County	18.49
Eagle Village	14.25	Louisa County	41.87	Marin County Schools	25.05
Elm Grove Village	26.04	Louisa Town	105.08	Menlo Park City	28.69
Elmbrook Sch Dist	41.70	Mckenney Town	109.10	Mill Valley City	29.15
Erin Sch Dist 2	28.18	Mineral Town	195.97	Millbrae City	49.03
Fox Point J2	31.00	New Kent County	53.33	Novato City	10.87
Fox Point Village	24.92	Petersburg City	109.43	Pacifica City	30.84
Franklin City	28.25	Port Royal Town	368.26	Portola Valley Town	10.18
Franklin Sch Dist	53.83	Powhatan County	42.25	Redwood City	46.58
Fredonia Village	31.18	Prince George County	61.81	Ross Town	28.82
Friess Lake Sch Dist	33.17	Richmond City	231.83	San Anselmo Town	86.42
Germantown Sch Dist	41.14	Stoney Creek Town	28.42	San Bruno City	37.23
Germantown Village	113.75	Sussex County	69.85	San Carlos City	28.03
Glendale City	32.44	Wakefield Town	223.12	San Francisco City And County	113.14
Glendale River Hills Sch Dist	23.37	Waverly Town	105.08	San Francisco Unif Sch Dist	28.96
Grafton Sch Dist	43.42	West Point Town	218.56	San Mateo City	34.64

Grafton Village	49.67			San Mateo County	12.14
Greendale Sch Dist	51.74			San Mateo County Schools	273.48
Greendale Village	25.04			San Rafael City	17.62
Greenfield City	31.00			Sausalito City	40.56
Greenfield Sch Dist	35.95			South San Francisco City	45.11
Hales Corners Village	26.96			Tiburon Town	10.30
Hamilton Sch Dist	44.48			Woodside Town	6.56
Hartford City	197.14				
Hartford Jt Sch Dist 1	26.97				
Hartford U H Sch Dist	20.10				
Hartland Village	29.09				
Hartland-Lakeside Jt Sd 3	32.33				
Jackson Village	52.44				
Kettle Moraine Sch Dist	43.30				
Kewaskum Sch Dist	36.04				
Kewaskum Village	42.04				
Lac La Belle Village	18.87				
Lake Country Sch Dist	35.59				
Lannon Village	43.61				
Maple Dale-Indian Hill	33.92				
Menomonee Falls Sch Dist	47.89				
Menomonee Falls Village	43.23				
Mequon City	17.07				

Mequon-Theinsville Sch Dst	41.20				
Merton Community Sch Dist	28.06				
Merton Village	2.22				
Milwaukee City	60.92				
Milwaukee City Sch Dist	34.18				
Milwaukee County	32.40				
Mukwonago Sch Dist	37.67				
Mukwonago Village	32.38				
Muskego City	24.34				
Muskego-Norway Sch Dist	42.49				
Nashotah Village	17.82				
New Berlin City	32.10				
New Berlin Sch Dist 14	50.95				
Newburg Village	28.59				
Nicolet Uhs Dist	21.47				
Norris Sch Dist	60.07				
North Lake Sch Dist	30.14				
North Prairie Village	16.11				
Northern Ozaukee Sch Dist	512.39				
Oak Creek City	38.49				
Oak Creek-Franklin Sch Dist	36.81				

Oconomowoc Area Sch Dist	36.90				
Oconomowoc City	80.82				
Oconomowoc Lake Village	15.66				
Ozaukee County	10.44				
Pewaukee City	15.78				
Pewaukee Sch Dist	42.80				
Pewaukee Village	29.44				
Port Washington City	107.08				
Port Washington-Saukville Sch Dist	43.26				
Richfield J1 Dist	26.37				
Richmond Sch Dist	39.36				
River Hills Village	19.78				
Saukville Village	66.25				
Shorewood Sch Dist	49.72				
Shorewood Village	27.68				
Slinger Sch Dist	40.28				
Slinger Village	78.21				
South Milwaukee City	38.88				
South Milwaukee Sch Dist	37.53				
St Francis City	34.12				

St Francis City Sch Dist 6	41.75				
Stone Bank Sch Dist	32.32				
Sussex Village	31.35				
Swallow Sch Dist	29.71				
Thienville Village	36.51				
Wales Village	12.73				
Washington County	19.04				
Waukesha City	94.37				
Waukesha County	10.62				
Waukesha Sch Dist	37.77				
Wauwatosa City	35.51				
Wauwatosa Sch Dist	31.25				
West Allis City	41.75				
West Allis Sch Dist	41.03				
West Bend City	37.51				
West Bend Joint Sch Dist 1	29.78				
West Milwaukee Village	72.01				
Whitefish Bay Sch Dist	58.20				
Whitefish Bay Village	17.41				
Whitnall Sch Dist	48.33				

Actual Collections Per Capita All Jurisdictions	**$1,839.79**		**$1,666.34**		**$2,577.89**

ENDNOTES

[1] Jerry C. Fastrup, "Fiscal Capacity, Fiscal Equalization and Federal Grant Formulas," in U.S. Department of the Treasury, *Federal-State-Local Fiscal Relations: Technical Papers – Volume 1*, September 1986, p. 41.

[2] For a discussion of these alternative concepts of fiscal capacity see U.S. Advisory Commission on Intergovernmental Relations, *Measuring State Fiscal Capacity: Alternative Methods and Their Uses*, (Report M-150), September 1986 as well as papers by Fastrup, Sawicky, Aten, Carnevale and Barro in U.S. Department of the Treasury, *Federal-State-Local Fiscal Relations: Technical Papers – Volume 1*, September 1986.

[3] For a detailed discussion of alternative approaches for measuring fiscal capacity see, The Advisory Commission on Intergovernmental Relations (ACIR) (1987), "Measuring State Fiscal Capacity: 1987 Edition, Appendix A: Alternative Measures of Fiscal Capacity and Their Uses." Washington, D.C.

[4] Katherine L. Bradbury and Helen F. Ladd, " Changes in the Fiscal Capacity of U.S. Cities 1970 to 1982," National Tax Association – Tax Institute of America, Proceedings of the Seventy-Seventh Annual Conference, 1984, Nashville, Tennessee, pp. 205-17. See also Katherine L. Bradbury, Helen F. Ladd, Mark Perrault, Andrew Reschovsky and John Yinger, "State Aid to Offset Fiscal Disparities Across Communities," *National Tax Journal*, Vol. 37, No. 2, June 1984, pp. 151-70; and Helen F. Ladd and John Yinger, *America's Ailing Cities: Fiscal Health and the Design of Urban Policy*, Baltimore, Johns Hopkins University Press, 1991.

[5] See Appendix D in U.S. Advisory Commission on Intergovernmental Relations, *Representative Expenditures: Addressing the Neglected Dimension of Fiscal Capacity*, (Report M-174), December 1990 for a more detailed discussion of the export adjusted income approach to measuring fiscal capacity.

[6] Helen F. Ladd, Andrew Reschovsky and John Yinger, "City Fiscal Condition and State Equalizing Aid: The Case of Minnesota," in *National Tax Association – Tax Institute of America, Proceedings of the Eighty-Fourth Annual Conference*, 1991, Williamsburg, Virginia, pp. 42-9.

[7] Advisory Commission on Intergovernmental Relations, *Measures of State and Local Fiscal Capacity and Tax Effort*, U.S. Government Printing Office, October 1962.

[8] The RTS measure was created in 1962, and it focused on measuring the tax and revenue sources in a region as well as the region's ability to export taxes. In 1971, the RTS was extended to include non-tax revenue sources that are frequently used by state and local governments. The augmented RTS measure is now called the Representative Revenue System (RRS).

[9] The general categories of tax bases included in the RTS measure include: general sales and gross receipts taxes, selective sales and gross receipt taxes, license taxes, individual income taxes, corporate income taxes, property taxes, estate and gift taxes, and severance taxes. The

RRS includes all of the tax bases in the RTS as well as: all other own source taxes, rents and royalties taxes, payments under the Mineral Leasing Act, and user charges (ACIR, 1987).

[10] U.S. Advisory Commission on Intergovernmental Relations, *Tax Capacity of the Fifty State, 1982* (Report M-142), May 1985, p. 4.

[11] Stephen M. Barro, "Improved Measures of State Fiscal Capacity: Short-Term Changes in the PCI and RTS Indices,' in U.S. Department of the Treasury, *Federal-State-Local Fiscal Relations: Technical Papers – Volume 1*, September 1986, p. 195.

[12] U.S. Advisory Commission on Intergovernmental Relations, *Tax Capacity of the Fifty States: Methodology and Estimates*, (Report M-134), March 1982, p. 13.

[13] Ibid, p. 14.

[14] More recently, see Tannenwald, Robert. 1997. "Fiscal Capacity, Fiscal Need, and Fiscal Comfort: New Evidence and its Relevance to Devolution," in *National Tax Association, Proceedings of the 90th Annual Conference, 1997*, Chicago, Illinois, pp. 395-405.

[15] National Academy of Science, *Governance and Opportunity in Metropolitan Areas,* Washington, D.C., National Academy Press, 1999, pp. 119-120.

[16] U.S. Advisory Commission on Intergovernmental Relations, *Measuring Metropolitan Fiscal Capacity and Effort: 1967 to 1980*, Working Paper 1, July 1983. Also, see Palumbo, George M. and Seymour Sacks. 2002. "Measuring Fiscal Disparities in American Metropolitan Areas: 1997" in *National Tax Association, Proceedings from the 95th Annual Conference, 2002, Orlando. Florida,* pp. 116-23.

[17] Richard K. Green and Andrew Reschovsky, "Fiscal Assistance to Municipal Governments," in *Dollars and Sense: Policy Choices and the Wisconsin Budget – Volume III*, edited by Donald A. Nichols, pp. 91-117.

[18] Robert W. Rafuse, Jr. and Laurence R. Marks, *A Comparative Analysis of Fiscal Capacity, Tax Effort, and Public Spending among Localities in the Chicago Metropolitan Region* prepared for The Regional Partnership, March 1991. The findings are summarized in Robert W. Rafuse, Jr., "Fiscal Disparities in Chicagoland," *Intergovernmental Perspective*, Summer 1991, pp. 14-19.

[19] It is not clear from the book whether this category is limited to real property, or whether it includes, but does not disaggregate, real and personal property.

[20] For a detailed description of the study area and the adjustments made to account for excluded municipalities, see Bell and Clark (2004), pp. 2-3.

[21] Applying these criteria, we suggested six metropolitan areas for the study. On June 24, 2004, Hal Wolman, Michael Bell, Pat Atkins and Leah Curran from George Washington University met with Alastair W.

McFarlane, the Government Technical Representative for this project, and two additional HUD staff members – Carolyn Lynch and Regina Grey – to discuss proposed metropolitan candidates for our case studies. Two issues emerged. First, there was a concern that we were proposing only one metropolitan area where local governments had access to a local income tax, and that all local governments in the metropolitan area had access to such a tax. It was agreed that we would include in the study a metropolitan area where the central city had access to some form of local income, or "commuter" tax, but the other jurisdictions in the metropolitan area did not. As a result, we agreed to substitute the San Francisco metropolitan area for the Oakland metropolitan area we had originally proposed. Second, we are using the Representative Revenue System developed by the U.S. Advisory Commission on Intergovernmental Relations to measure fiscal capacity and effort for individual local governments within a metropolitan area. Because of the quantity of data required for this approach, it is difficult to apply to fragmented metropolitan areas with many local governments. A question was raised about how much we would lose in terms of the relative ranking of general-purpose local governments fiscal capacity and effort if we simply omitted single-purpose local governments from our analysis – e.g. school districts and special districts. We agreed to do a series of sensitivity tests to our results to see what impact omitting single-purpose local governments from our empirical work on the relative rankings for general-purpose local governments based on measures of fiscal capacity and effort.

[22] OMB Bulletin No. 04-03.

[23] An MD is comparable in concept, and equivalent to, the previous Primary Metropolitan Statistical Area. The OMB Bulletin says that research and analysis that previously used data from PMSAs should now use data for MDs. Given this new framework, we define metropolitan areas for this study to be Metropolitan Statistical Areas, or the relevant Metropolitan Division within a Metropolitan Statistical Area. (Ibid.)

[24] Figure obtained from U.S. Census Bureau website by selecting People, then Estimates, then Archived or Archives, then 2000s, then Vintage 2002, then County, then 2000 to 2002 Annual Population Estimates by County, then Nevada, to reach the table entitled Nevada County Population Estimates: April 1, 2000 to July 1, 2002, at http://www.census.gov/popest/archives/2000s/vintage_2002/CO-EST2002-01/CO-EST2002-01-32.html

[25] Figures for places can be obtained from U.S. Census Bureau website by selecting People, then Estimates, then Archived or Archives, then 2000s, then Vintage 2002, then Place and County Subdivision, then Annual Time Series of Population Estimates, then 2000 to 2002 Estimates for Places Sorted Within County, at http://www.census.gov/popest/archives/2000s/vintage_2002/SUB-EST2002-10.html. At this location, the user can select the individual state.

[26] The Clark County Manager of Technical Support for the Office of the Assessor, Robert Kelley noted of the Census list that there were many more entities that we did not have. E-mail communication to Pat Atkins, November 17, 2005.

[27] On February 10, 2005, Laura Kittel explained to Pat Atkins that only some of the railroad operating real property assessable base figures were available broken out from the personal property figure by the state, which she supplied.

[28] Personal e-mail communication to Pat Atkins from the Clark County Manager of Technical Support for the Office of the Assessor, Robert Kelley noted of the Census, November 7, 2005.

[29] We are assuming a resident-based local personal income tax base. That is the model used in Maryland, for example. A local personal income tax based on place of employment would produce a much different distribution of the personal income tax base across jurisdictions.

[30] U.S. Bureau of the Census, 2000 Census of Population, American FactFinder, Table P83. Aggregate income in 1999 (dollars) for the population 15 years and over, found at www.census.gov.

[31] U.S. Bureau of the Census, 2000 Census of Population, American FactFinder, Table P83. Aggregate income in 1999 (dollars) for the population 15 years and over, found at www.census.gov.

[32] Initially, the greatest variation was in Miami, FL because Indian Creek Village had an index of 6405. This high index resulted because Indian Creek has a population of 33 and a per capita income of $141,545. Subsequently, because of the unique nature of Indian Creek, we excluded it from our analysis.

[33] Advisory Commission on Intergovernmental Relations, *Measures of State and Local Fiscal Capacity and Tax Effort*, U.S. Government Printing Office, October 1962.

[34] U.S. Census of Governments Home Page; Subjects Index "M", Metropolitan and Micropolitan Statistical Areas; Ranking Tables for Population of Metropolitan Statistical Areas, Micropolitan Statistical Areas, Combined Statistical Areas, New England City and Town Areas, and Combined New England City and Town Areas: 1990 and 2000 (Areas defined by the Office of Management and Budget as of June 6, 2003.) (PHC-T-29); Table 2a. Population in Metropolitan and Micropolitan Statistical Areas and Their Geographic Components in Alphabetical Order and Numerical and Percent Change for the United States and Puerto Rico: 1990 and 2000

[35] Special Assessments are compulsory contributions and reimbursements from owners of property who benefit from specific public improvements; and impact fees to fund extension of water, sewer, roads, and other infrastructure facilities in new developments. These contributions and reimbursements are designed to defray all or part of the cost of such improvements, either directly or through payment of principal and interest on debt issued to finance them. Generally, special assessments are apportioned according to assumed benefits to the property affected by the improvements. They cover not only general improvements--such as street paving, sidewalk, highway construction, sewer lines, drainage and irrigation projects--but also utility improvements, such as water lines. See U.S. Bureau of the Census**,** ***Government Finance and Employment: Classification*** *Manual*, May 2001, Code U01. Available at http://www.census.gov/govs/www/class.html.

Appendices B-G
Intrametropolitan Area Revenue Raising Disparities and Equities and the Property Tax

November 2005

Appendix B – Baltimore, Maryland

PURPOSE

The purpose of this section of the Appendix is to detail the application of the Representative Revenue System (RRS) to the case study of metropolitan Baltimore, Maryland. In this section, we discuss the selection of local jurisdictions included in this case study, detail the revenues collected, document the base for each revenue that is collected, show how the revenues and their bases are used to generate estimates of revenue raising capacity and effort for this case study, and analyze revenue raising capacity and effort.

As part of our sensitivity analysis, we gathered revenue collection and revenue base data for the Baltimore metropolitan area not solely for municipalities and counties as with the other metropolitan areas, but also for individual special districts. In the overview introduction of the research, we presented the Baltimore metropolitan area status using the data that were generated to match the other five metropolitan area processes. Here we use the additional data, enabling a more complete view of the revenue raising capacity and effort of the region.

Jurisdiction Selection

In selecting governments to include, we start with the Census definition of the Baltimore, Maryland Metropolitan Area: Anne Arundel, Baltimore, Carroll, Harford, Howard, and Queen Anne's Counties, plus Baltimore City and all municipalities, and special districts appearing in the 2002 Census of Governments. School districts are not independent in Maryland. (See Table B-1) With the exception of Baltimore City that, as an independent city, is not a part of any county, Maryland cities are governmentally part of the county in which they are geographically located. We verified that the Baltimore Metropolitan Area had sufficient 2000 population (2,552,994) to qualify as a case study.[1]

Inclusion of special districts within our revenue raising research for the Baltimore Metropolitan Area required that we acknowledge the limited revenue raising capacity of special districts within our calculations. Unlike general purpose governments such as municipalities and counties, that are given the ability to raise funds through a variety of legislatively-bestowed and discretionary tools, special districts have very precise fiscal capacities directed to very specific activities.

The special districts within the Baltimore Metropolitan Area clustered within the census revenue categories of housing and community development charges, solid waste charges, and the other NEC charges. Consequently, in calculating the revenue raising capacity total for all jurisdictions, we added in the bases for the housing authorities under housing and community development charges, the base for the waste disposal authority under the solid waste charge, and the bases for the soil conservation districts under the other NEC charges. Similarly, in calculating the revenue raising capacity for each jurisdiction, we added in the base for each

housing authority under the housing and community development charge, the base for the waste disposal authority under the solid waste charge, and the base for each soil conservation district under the all other NEC charge. Additionally, two special districts levied property taxes.[2]

Table B-1
Selected Local Governments in Metropolitan Baltimore, Maryland, 2002

Counties	Municipalities	School and Special Districts
Anne Arundel	Annapolis	Annapolis Housing Authority
	Highland Beach	Anne Arundel County Housing Authority
		Anne Arundel County Soil Conservation District
		Sawmill Creek Watershed Association
Baltimore City		Baltimore City Housing Authority
Baltimore County		Baltimore County Housing Authority
		Baltimore County Soil Conservation District
Carroll County	Hampstead	Carroll County Soil Conservation District
	Manchester	
	Mount Airy	
	New Windsor	
	Sykesville	
	Taneytown	
	Union Bridge	
	Westminster	
Harford County	Aberdeen	Harford County Soil Conservation District
	Bel Air	Havre de Grace Housing Authority
	Havre de Grace	Deer Creek Watershed Association
Howard County		Howard County Housing Commission
		Howard County Soil Conservation District
Queen Anne's County	Barclay	Queen Anne's County Housing Authority
	Centreville	Queen Anne's County Soil Conservation District
	Church Hill	
	Queenstown	
	Sudlersville	
	Templeville	
Multi-County		Gwynns Falls Watershed Association

		Jones Falls Watershed Association
		Northeast Maryland Waste Disposal Authority

Types of Revenues Collected

Table B-2 lists the local own-source revenues included in our study of revenue raising capacity and effort of local governments in metropolitan Baltimore, Maryland. Maryland does not permit local governments to levy general sales taxes.

Table B-2
Local Government Revenue Sources Included in Metropolitan Baltimore, Maryland

Sales Taxes	Other Taxes	Non-Tax Revenues
Total Selective Sales Taxes Public Utility Sales Other Selective Sales Taxes	Personal Income Taxes Property Taxes Real Personal	General User Charges Public Utilities Charges

Data Sources for Revenues Collected

Using 2002 Census of Governments data, we determined that county governments and Baltimore City in the Baltimore Metropolitan Area accounted for 97.47 percent of total local own-source revenues in the metropolitan area. In the Baltimore Metropolitan Area, special districts only collect 0.91 percent of the total General Revenue from Own Sources for counties, municipalities, and special districts, while municipalities only contribute 1.62 percent, as show in Table B-3. Baltimore City, an independent entity separate from any county, is defined by the Census Bureau as a county equivalent. We did not locate any source at the state level for special district data, so we obtained some data directly from individual special districts or employed estimation formulas as is noted in appropriate instances. Similarly, we occasionally use estimation for those times when we could not locate municipal data.

A region-wide special district, the Northeast Maryland Waste Disposal Authority, in both 2000 and FY2002 included a jurisdiction not in the Baltimore Metropolitan Area. Consequently, we readjusted the revenues from the Authority, omitting revenues contributed by jurisdictions extant to our study boundaries.[3]

Table B-3
Percent of Local Own Source Revenue Collected by Jurisdiction Type, Metropolitan Baltimore, FY2002

Baltimore Metropolitan Area	Counties	Municipalities	School Districts	Special Districts
Percent of total local own-source general revenue by government type	97.47 %	1.62 %	Not Independent	0.91 %

Data Sources for Maryland Real and Personal Property Tax Revenue

The Census data do not provide a breakdown of property tax collections into real and personal property tax revenue. We were able to obtain the amount of revenues collected from real and personal property for counties and almost all cities from Maryland for FY 2002, and we estimated this for special districts.[4] These data collected at the state level did not equal the totals reported by the Census Bureau - this is probably a result of differences between the Census' and the state agencies' definitions of what categories are included under property taxes. The method we employed to apportion the Census data into real and personal property tax revenue was to use the state data to calculate the share of real and personal property revenue to total property tax collections for municipalities and counties and then to apply these percentages to the Census data. For the two special districts that utilized property tax, we derived from municipalities and counties an average percentage of real and of personal property tax, noted in more detail shortly, and we then applied this to the special district property tax totals shown in the Census of Governments file. In this way, we estimated the real property and personal property of both. Because total property tax revenue also includes money earned from interest and penalties, this revenue was added to each jurisdiction's real property revenue tax total prior to these calculations.

For Maryland counties and municipalities, a partial breakdown of real and personal property tax revenues was available on the Uniform Financial Report filed with the state Department of Legislative Services by each jurisdiction, called the GASB 34 Form. Jurisdictions report local tax revenues on these forms under three categories: local property tax revenues, local income tax revenues, and other local tax revenues. Within the local property tax revenues category, there are nine line items and four are values relevant to our research. These four include real property, personal property, railroads and public utilities, and penalties and interest-delinquent taxes. Our research requires that we apportion these four local property tax revenues into two categories: real and personal property revenues. For tax purposes, both real and personal property of public utilities is taxed subject to the personal property tax rate, allowing us to include that into personal property. Businesses are subject only to personal property tax in Maryland, again enabling us to place business revenues into the personal property revenues category. However, railroads are subject to both personal and real property assessments, and thus revenue raising, requiring us to solicit a further breakdown of railroad revenues beyond what is represented in GASB 34. State officials supplied this additional revenue data.[5] For four of our municipalities, the exact figures

are not publicly disclosed. Queen Anne's County is one of the few jurisdictions in the state that does not assess local personal property nor collect local personal property taxes, so only the state-assessed (also often called centrally-assessed) railroad and public utilities category shows up with personal property revenue collection.[6]

Data Sources for Other Revenues

Data sources for other revenues for the Baltimore Metropolitan Area came from the 2002 Census of Governments.

Data Sources for Tax Bases

In identifying appropriate representative user charges and tax bases, we have taken care to choose those bases that did not reflect local government policies. This insures a base that can be comparably interpreted across all jurisdictions. Where possible, we utilized the actual tax base, but in many instances, our acquisition of the actual charges and tax base amounts would have been inordinately labor intensive, and thus costly and time-consuming. We therefore obtained surrogate representative bases. This section outlines the economic bases selected, the data sources used, and any calculations made to estimate an appropriate base.

Property Tax Base

According to the state, properties are reassessed for tax billing purposes once every three years and property owners are notified of any change in their assessment. Assessments are certified by the Department of Assessment and Taxation to local governments where they are converted into property tax bills by applying the appropriate property tax rates. Assessments are based on the fair market value of the property at 100 percent of market value.

While property reassessments for billing purposes occur only once every three years, interim property tax base assessments are recalculated at several points within the tax year and released by the state through several different sources.[7] For most jurisdictions, there was a nominal change in property values. Only four jurisdictions' property assessments differed by more than five percent among their various collected assessment figures for FY2002.[8]

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For Maryland counties and municipalities, a partial breakdown of real and personal property tax assessments was available on the Uniform Financial Report filed with the state Department of Legislative Services by each jurisdiction, called the GASB 34 Form. Jurisdictions report property assessments on these forms under four categories: real, locally assessed personal, centrally assessed railroad and public utilities (RPU), and ordinary business corporations (OBC).

Our research requires only two categories from that form: real and personal property assessments. For tax purposes, both real and personal property of public utilities is assessed and reported subject to the personal property tax rate, allowing us to sum that into the personal property assessment category. Businesses were subject only to personal property tax, again allowing us to sum their assessed value into personal property. However, railroads are subject to both personal and real property taxation, requiring us to solicit for municipalities a breakdown of

the railroad category into the real property assessment values and the personal property assessment. Counties already are required to file this breakdown with the state, making it accessible to us.

In Maryland, real and personal property assessments are available for the counties in our study from several locations on the website home page of the State Department of Assessment and Taxation.[9] While several sources were available online for counties, this was not so for municipalities where we only located one source which also contained county information. We wanted a standardized source for both governmental types so we utilized the real and personal property assessments for both counties and municipalities from the Unified Financial Reports filed by the jurisdictions to the state Department of Legislative Services, the GASB 34 form,[10] but needed assistance from the state in disaggregating the RPU figure.[11] This was the one common public source of assessment data for both counties and municipalities. None was available for special districts, so we used an estimate for this.[12]

We were able to obtain the municipal business personal property assessment figures from the State Department of Assessments and Taxation's Certification Data File prior to locating the GASB 34 form data.[13] Because the GASB 34 form data contained most of our needed assessment values and the Certification Data File only contained the business personal property assessment, we decided to use the GASB 34 form source.

Real Property Base

The real property tax base is defined as the fair market value of all property in each jurisdiction, excepting property that is typically exempt from taxation (i.e. government property, churches, nonprofits). The representative base for real property in Maryland, upon which revenue collection is calculated, is the net assessed value of property at 100% of market value.

As previously noted, the Maryland State Department of Assessments and Taxation publishes real property assessment values at several times in a tax year; the values in the reports may differ slightly due to the time of year assessments are done.

As noted above, real property assessments are available from several locations on the website home page of the State Department of Assessment and Taxation,[14] and we chose real property assessments for counties and municipalities from the GASB 34 form and estimated special districts, both noted earlier.[15]

Personal Property Base

In Maryland, personal property taxes are local options; therefore, each local jurisdiction has discretion over what is subject to the personal property taxes. See Table B-4 for local government options.

In Maryland, personal property assessments were available through the same reports that provided real property assessments,[16] as well as the source we ultimately used, again for counties and municipalities, the Unified Financial Reports filed by the jurisdictions to the state

Department of Legislative Services, the GASB 34 form with estimations done for special districts.[17] In Maryland, three categories are assessed for personal property taxation: railroad operating, public utility operating, and other business personal property. However the state does not need to disaggregate railroad operating or public utility operating (RPU) into real and personal property figures. State officials computed real property figures for railroad operating for us and from that set of figures, we were able to complete the disaggregation.[18]

Table B-4
Personal Property Tax Local Options

Maryland
Furniture, Fixtures, Machinery and Equipment
Leased Property
Other Tangible Personal Property
Commercial & Manufacturing Inventory
Supplies
Other Vehicles
Livestock/Agriculture

General Sales Tax Base

The state of Maryland does not permit its local governments or special districts to levy a sales tax.

Selective Sales Taxes Base

Census defines Selective Sales Taxes as taxes imposed on the sale of particular commodities or services or on the gross receipts of particular businesses separately and apart from the General Sales tax. The U.S. Advisory Commission on Intergovernmental Relations included nine separate selective sales taxes in their calculations of Representative Revenue Systems for the 50 states. However, many of these selective sales taxes are state only revenue sources. For example, the ACIR includes in its measures selective sales taxes on motor fuel, insurance premiums and alcohol. Local governments typically do not have access to these revenue sources so we have excluded them from our estimates of local own-source revenue raising capacity. However, based on the experiences of local governments in this study area, we include selective sales taxes on public utilities, and other selective sales taxes.

Selective sales taxes on public utilities include taxes on transportation companies, telephones, telegraphs and light and power. The base of the tax is generally the gross receipts or gross earnings of the company providing the service. Sometimes the tax may be based on the number of units sold, e.g. kilowatt-hours of electricity. Obtaining this base from the pertinent companies is not feasible. In any case, however, the base of the tax reflects consumption decisions by individual consumers. As a result, we use aggregate personal income for 1999 as the representative base for selective sales taxes.

Aggregate personal income for 1999 was obtained for all local jurisdictions from the 2000 Census of Population.[19] The U.S. Bureau of Economic Analysis published estimated aggregated personal income for 2001 and for 2002, but they generate the figures for counties only. This necessitated use of the 2000 Census of Population, because figures were available for counties and municipalities. Use of the 2000 Census of Population aggregate income data results marginally skews our results, because we expect incomes to be higher in 2002. Consequently, our usage of the 2000 Census of Population data (again, which reports aggregate personal income for 1999) to generate revenue raising capacity levels introduces a bias into our hypothetical revenue raising capacity figures, making them marginally higher than they otherwise would be.

Other Selective Sales Taxes

According to the Census Bureau definitions, Other Selective Taxes include taxes on specific commodities, businesses, or services not reported separately under selective sales taxes. For example, this would include taxes on contractors, lodging, lubricating oil, fuels other than motor fuel, motor vehicles, meals, soft drinks, margarine, etc. Unfortunately, the Census data do not break down total revenues from other selective sales taxes into these component parts. As a result, we use aggregate personal income for 1999 as the representative base for other selective sales taxes. Aggregate personal income for 1999 was obtained for all jurisdictions from the 2000 Census of Population.[20] As noted earlier, this introduces a bias into our hypothetical revenue raising capacity figures, making them marginally higher than they otherwise are.

Income Tax Base

We use Adjusted Gross Income (AGI) for tax year 2001, covering the state fiscal year ending June 30, 2002, as the representative tax base for the income tax. AGI for Maryland was collected from state reports.[21]

User Charges Base

According to the Census Bureau definition, Current Charges reflect "Amounts received from the public for performance of specific services which benefit the person charged and from sale of commodities or services." Basically, Current Charges are user charges, which reflect the consumption decisions of individual citizens. Thus, revenue generated from user charges depends, in large part, on prices charged and the resulting consumption choices of individual citizens. For the purposes of this study, then, we use aggregate personal income for 1999[22] as the representative base for general user charges, recognizing the limitations covered above.

Public Utilities Base

For the purposes of this study, Public Utility charges include revenues from water, electric, gas, and transit utilities. In each case, there is a charge for the service being provided – essentially making these revenues comparable to user charges. As a result, we use aggregate personal income for 1999 as the representative base for user charges, remembering the concerns expressed in earlier sections.[23]

Case Example of Revenue Raising Capacity and Effort Calculations

This section presents calculations for an individual county, so that each phase of the calculation is delineated. These calculations are detailed below using Anne Arundel County's property tax revenue as an example.

The first step, after data collection, is to calculate the *average tax rate* for each revenue source by dividing the total collections of all local jurisdictions by the total base for that revenue source.

1) Census-adjusted

Real Property Tax Revenue All Local Governments		Real Property Tax Base All Local Governments		Avg. Real Property Tax Rate
$1,941,289,056	/	$138,738,870,574	=	1.40%

Hypothetical Yield or Revenue Capacity

The *potential***,** or *hypothetical*, revenue that a local government can generate is calculated by applying the average tax rate or user charge percent for each revenue source to the appropriate standard, representative base for that tax or charge. Here, we have selected Anne Arundel County, Maryland, and the Real Property Tax share of Anne Arundel County's total revenue sources to demonstrate the process.

2)

Anne Arundel County's Real Property Tax Base		Average Real Property Tax Rate		Anne Arundel County's Hypothetical Real Property Revenue
$33,562,329,822	X	1.40%	=	$469,617,370

Per Capita Hypothetical Yield, or Revenue Capacity

The hypothetical revenue is then divided by the local jurisdiction's population to arrive at the *per capita hypothetical revenue capacity***.**

3) Anne Arundel County's Hypothetical Real Property Revenue		Anne Arundel County's Population		Anne Arundel County's Hypothetical Revenue Per Capita
$469,617,370	/	489,656	=	$959.08

Revenue Raising Capacity Index

The *revenue raising capacity index* is determined by dividing the county's hypothetical real property tax revenues per capita by the hypothetical per capita real property tax revenues for all local governments and multiplying by 100.

4) Anne Arundel County's Hypothetical Real Property Revenue Per Capita		All Local Governments' Per Capita Hypothetical Real Property Revenues		Anne Arundel County's Revenue Raising Capacity Index for Local Property Taxes
($959.08	/	$760.40) x 100	=	126.13

Just as we have illustrated for Real Property, the above calculations are carried out for each revenue source as well as for total revenue, and then they are aggregated to obtain one measure of revenue raising capacity per capita and one revenue raising index. When we carried this sequence out for Anne Arundel County, the final capacity per capita value for all revenue sources was $2146.04 and the revenue capacity index was 120.60.

Revenue Raising Effort Index

The *revenue raising effort index* is calculated by dividing each local government's actual collections per capita by its hypothetical yield, or revenue capacity, per capita and then multiplying by 100. Below Anne Arundel County's revenue raising effort index is calculated for its total own source revenue.

5) Anne Arundel County's Per Capita Actual Collections For Total Own Source Revenue		Anne Arundel County's Per Capita Hypothetical Total Own Source Revenue		Anne Arundel County's Revenue Raising Effort Index
($1884.16	/	$ 2146.04) x 100	=	87.80

Again, these calculations are done for each revenue source as well as for total revenue.

EMPIRICAL RESULTS

We generated revenue raising capacity and revenue raising effort for all jurisdictions with special districts collapsed into one line (Table B-5A) and broken into individual computations (Table-5B), and these are presented alphabetically below.

When we introduce the Baltimore metropolitan area special districts individually under the Expanded RRS method, a sensitivity test employed with the Baltimore case study only, the recalculated coefficient of variation is 1.13 for hypothetical capacity. This large jump in variability indicates that a significant degree of variability in revenue capacity is introduced by special district governments in the Baltimore metropolitan area. For revenue effort, the Baltimore metropolitan area shifts from .73 to 1.41, when introducing special districts, and this, then, also implies substantial additional variation across special districts' revenue efforts.

Table B-5A
Revenue Raising Capacity and Effort of
Local Governments in the Baltimore Metropolitan Area, FY2002
RRS Method

Local Jurisdictions	Revenue Raising Capacity			Revenue Raising Effort		
	Total Hypothetical Collections Per Capita	Index	Rank	Actual Collections Per Capita	Index	Rank
Aberdeen City	$1,085.93	61.02	16	$466.77	42.98	12
Annapolis City	$924.19	51.94	24	$938.56	101.55	2
Anne Arundel County	$2,146.04	120.60	4	$1,884.16	87.80	6
Baltimore City	$1,054.79	59.27	18	$1,445.09	137.00	1
Baltimore County	$1,856.56	104.33	8	$1,772.45	95.47	3
Barclay Town	$1,818.53	102.19	9	$41.96	2.31	27
Bel Air Town	$1,555.25	87.40	12	$619.44	39.83	14
Carroll County	$1,878.50	105.56	7	$1,491.49	79.40	8
Centreville Town	$ 6,266.06	352.13	1	$1,238.07	19.76	23
Church Hill Town	$828.53	46.56	25	$262.26	31.65	16
Hampstead Town	$1,055.83	59.33	17	$259.88	24.61	18
Harford County	$1,812.85	101.88	10	$1,612.88	88.97	5
Havre De Grace City	$1,029.49	57.85	19	$590.68	57.38	9
Highland Beach Town	$2,001.60	112.48	6	$440.37	22.00	20
Howard County	$2,558.76	143.79	2	$2,310.25	90.29	4
Manchester Town	$1,021.80	57.42	20	$517.87	50.68	10
Mt Airy Town	$1,638.57	92.08	11	$343.35	20.95	21
New Windsor Town	$1,117.30	62.79	15	$222.56	19.92	22
Queen Anne's County	$2,245.28	126.18	3	$1,902.92	84.75	7
Queenstown Town	$2,006.13	112.74	5	$627.23	31.27	17
Sudlersville Town	$1,271.50	71.45	13	$286.45	22.53	19
Sykesville Town	$952.36	53.52	23	$147.72	15.51	24
Taneytown City	$994.38	55.88	22	$365.05	36.71	15
Templeville Town	$551.49	30.99	27	$62.50	11.33	25
Union Bridge Town	$1,008.81	56.69	21	$424.67	42.10	13
Westminster City	$1,157.25	65.03	14	$544.44	47.05	11
Special Districts	$552.25	31.03	26	$16.21	2.94	26

Summary Statistics						
Maximum	$6,266.06	352.13		$2,310.25	137.00	
Minimum	$551.49	30.99		$16.21	2.31	
Range	$5,714.57	321.14		$2,294.04	134.70	
Standard Deviation	$1,081.08	60.75		$671.66	35.10	
Mean	$1,570.00	88.23		$771.68	48.40	
Coefficient of Variation	0.69	0.69		0.87	0.73	

Table B-5B
Revenue Raising Capacity and Effort of
Local Governments in the Baltimore Metropolitan Area, FY2002
Expanded RRS Method

Local Jurisdictions	Revenue Raising Capacity			Revenue Raising Effort		
	Total Hypothetical Collections Per Capita	Index	Rank	Actual Collections Per Capita	Index	Rank
Aberdeen City	$ 1,085.93	61.02	16	$ 466.77	42.98	18
Annapolis City	$ 924.19	51.94	24	$ 938.56	101.55	5
Anne Arundel County	$ 2,146.04	120.60	4	$ 1,884.16	87.80	9
Baltimore City	$ 1,054.79	59.27	18	$ 1,445.09	137.00	4
Baltimore County	$ 1,856.56	104.33	8	$ 1,772.45	95.47	6
Barclay Town	$ 1,818.53	102.19	9	$ 41.96	2.31	35
Bel Air Town	$ 1,555.25	87.40	12	$ 619.44	39.83	20
Carroll County	$ 1,878.50	105.56	7	$ 1,491.49	79.40	11
Centreville Town	$ 6,266.06	352.13	1	$ 1,238.07	19.76	31
Church Hill Town	$ 828.53	46.56	25	$ 262.26	31.65	24
Hampstead Town	$ 1,055.83	59.33	17	$ 259.88	24.61	26
Harford County	$ 1,812.85	101.88	10	$ 1,612.88	88.97	8
Havre De Grace City	$ 1,029.49	57.85	19	$ 590.68	57.38	14
Highland Beach Town	$ 2,001.60	112.48	6	$ 440.37	22.00	28
Howard County	$ 2,558.76	143.79	2	$ 2,310.25	90.29	7
Manchester Town	$ 1,021.80	57.42	20	$ 517.87	50.68	15
Mt Airy Town	$ 1,638.57	92.08	11	$ 343.35	20.95	29
New Windsor Town	$ 1,117.30	62.79	15	$ 222.56	19.92	30
Queen Annes County	$ 2,245.28	126.18	3	$ 1,902.92	84.75	10
Queenstown Town	$ 2,006.13	112.74	5	$ 627.23	31.27	25
Sudlersville Town	$ 1,271.50	71.45	13	$ 286.45	22.53	27
Sykesville Town	$ 952.36	53.52	23	$ 147.72	15.51	33
Taneytown City	$ 994.38	55.88	22	$ 365.05	36.71	22
Templeville Town	$ 551.49	30.99	26	$ 62.50	11.33	34
Union Bridge Town	$ 1,008.81	56.69	21	$ 424.67	42.10	19
Westminster City	$ 1,157.25	65.03	14	$ 544.44	47.05	17

Annapolis Housing Auth	$ 16.35	0.92	34	$ 72.02	440.56	2
Anne Arundel Co Housing Auth	$ 16.60	0.93	33	$ 5.72	34.43	23
Anne Arundel Soil Conserv Dist	$ -	0.00	39	$ -	-	39
Baltimore City Housing Auth	$ 10.22	0.57	37	$ 45.65	446.68	1
Baltimore Co Soil Cons Dist	$ 36.57	2.06	28	$ 0.12	0.32	38
Bear Creek Watershed Association	$ -	-	39	$ -	-	39
Carroll Soil Conservation Dist	$ 33.30	1.87	29	$ 0.20	0.60	37
Deer Creek Watershed Association	$ -	-	39	$ -	-	39
Gwynns Falls Watershed Assoc	$ 18.42	1.03	32	$ 12.04	65.38	12
Harford Soil Cons Dist	$ -	0.00	39	$ -	-	39
Havre De Grace Hous Auth	$ 12.76	0.72	36	$ 18.09	141.82	3
Howard Co Housing Commission	$ 19.51	1.10	31	$ 3.47	17.77	32
Howard Soil Conservation Dist	$ -	0.00	39	$ -	-	39
Jones Falls Watershed Assoc	$ 0.04	0.002	38	$ 0.02	62.05	13
Northeast Maryland Waste Disposal Auth	$ 27.61	1.55	30	$ 0.24	0.85	36
Queen Anne's Co Housing Auth	$ 15.87	0.89	35	$ 7.69	48.47	16
Queen Annes Soil Conserv Dist	$ 36.85	2.07	27	$ 14.37	39.01	21
Sawmill Creek Watershed Assoc	$ -	-	39	$ -	-	39
Summary Statistics						
Maximum	$6,266.06	352.13		$2,310.25	446.68	
Minimum	$ -	0.0		$ -	0.32	
Range	$6,266.06	321.14		$2,310.25	446.36	
Standard Deviation	$1,145.19	64.96		$643.28	96.47	
Mean	$956.41	88.23		$477.24	68.47	
Coefficient of Variation	1.13	0.69		1.35	1.41	

Revenue Raising Effort

Examining the data in Table B-6, we see there is a divide between the collar counties and the core city, Baltimore City. Baltimore City revenue raising effort exceeded the standard index for the region, along with four others.

In terms of revenue raising effort – the extent to which local governments are utilizing their available revenue sources, only five entities are exceeding the metropolitan area's standardized average. These include three housing authorities (Baltimore City's authority at 447, Annapolis' authority at 441, and Havre de Graces' authority at 142), and Baltimore City (137), and Annapolis City (102).

The six counties follow next in line: Baltimore County at 95, Howard County at 90, Harford County at 89, Anne Arundel County at 88, and Carroll County at 79. Howard County collects the most per capita in the region, $2310, but also is second in the region and the highest for counties in hypothetical collections per capita, $2559.

The regional waste disposal special district (.85) and two soil conservation districts (.60) (.32), ranked the lowest on revenue raising effort indexes of those jurisdictions that collected revenues. Among the general purpose governments, the smaller towns were lowest in revenue raising efforts.

In FY2002, Baltimore City generated higher revenue raising effort indices on more individual categories than any other jurisdiction. These individual revenue sources indexes are among the top compared to other jurisdictions in the region for these categories: total select sales tax (249), regular highways (295), parking (408), and total utility (296).

But Baltimore City was not alone in generating individual category revenue raising effort indexes above what is typical for the region. Others included Annapolis City with parking (506), solid waste management (219), water transport (4911), and transit utility (6400); Bel Air Town with regular highways (1329) and parking (634); Harford County with regular highways (309) and all other NEC (280); and Manchester with water utility (357). Among the special district agencies were Baltimore City Housing Authority on housing and community development (447) and, similarly, Annapolis Housing Authority (441).

Revenue Raising Capacity

Examining the data in Table B-6, we see there again is a divide between Baltimore City and the counties within the region. The six counties ranked in the top ten, all above the metropolitan average, and Baltimore City was 18th in revenue-raising ability. Centerville Town in Queen Anne's County (352) ranked first in revenue raising ability. Howard County was next, first among the counties on the revenue raising capacity index, (144), followed by Queen Anne's County (126), Anne Arundel County (121), Carroll County (106), Baltimore County (104), and

Harford County (102). Baltimore City (59) and Annapolis (52), were half that of counties in the Baltimore metropolitan area.

Centerville significantly outdistanced next nearest towns Queenstown (122.74) in Queen Anne's County and Highland Beach (112.48) in Anne Arundel County.. Note that Aberdeen, Havre de Grace, Templeton, Union Bridge, and Westminster each required estimation for some part of its calculations, as discussed above and within the footnotes.

Special districts generate low revenue raising capacity compared to the average for other types of local governments in the region. This is to be expected due to their targeted governmental responsibilities and limited legal authority to raise finances. The range includes the three soil conservation districts at the top (2.07, 2.06, and 1.87). The Baltimore City Housing Authority had the lowest revenue raising capacity of all of the local governments in the region (.57) that raise revenues.

Table B-6
Revenue Raising Capacity and Effort of
General Governments and Special Purpose Governments in the Baltimore Metropolitan Area, FY2002
Separately by Rank on Revenue Raising Effort

	Revenue Raising Effort			Revenue Raising Capacity		
	Actual Collections per Capita	Index	Rank	Total Hypothetical Collections per Capita	Index	Rank
Maryland		-	-			-
General Governments						
Baltimore City	$1,445.09	137.00	1	$1,054.79	59.27	18
Annapolis City	$938.56	101.55	2	$924.19	51.94	24
Baltimore County	$1,772.45	95.47	3	$1,856.56	104.33	8
Howard County	$2,310.25	90.29	4	$2,558.76	143.79	2
Harford County	$1,612.88	88.97	5	$1,812.85	101.88	10
Anne Arundel County	$1,884.16	87.80	6	$2,146.04	120.60	4
Queen Annes County	$1,902.92	84.75	7	$2,245.28	126.18	3
Carroll County	$1,491.49	79.40	8	$1,878.50	105.56	7
Havre De Grace City	$590.68	57.38	9	$1,029.49	57.85	19
Manchester Town	$517.87	50.68	10	$1,021.80	57.42	20
Westminster City	$544.44	47.05	11	$1,157.25	65.03	14
Aberdeen City	$466.77	42.98	12	$1,085.93	61.02	16
Union Bridge Town	$424.67	42.10	13	$1,008.81	56.69	21
Bel Air Town	$619.44	39.83	14	$1,555.25	87.40	12
Taneytown City	$365.05	36.71	15	$994.38	55.88	22

Church Hill Town	$262.26	31.65	16	$828.53	46.56	25
Queenstown Town	$627.23	31.27	17	$2,006.13	112.74	5
Hampstead Town	$259.88	24.61	18	$1,055.83	59.33	17
Sudlersville Town	$286.45	22.53	19	$1,271.50	71.45	13
Highland Beach Town	$440.37	22.00	20	$2,001.60	112.48	6
Mt Airy Town	$343.35	20.95	21	$1,638.57	92.08	11
New Windsor Town	$222.56	19.92	22	$1,117.30	62.79	15
Centreville Town	$1,238.07	19.76	23	$6,266.06	352.13	1
Sykesville Town	$147.72	15.51	24	$952.36	53.52	23
Templeville Town	$62.50	11.33	25	$551.49	30.99	26
Barclay Town	$41.96	2.31	26	$1,818.53	102.19	9
Special Districts						
Baltimore City Housing Auth	$45.65	446.68	1	$10.22	0.57	11
Annapolis Housing Auth	$72.02	440.56	2	$16.35	0.92	8
Havre De Grace Hous Auth	$18.09	65.38	3	$12.76	0.72	10
Gwynns Falls Watershed Assoc	$12.04	62.05	4	$18.42	1.03	6
Jones Falls Watershed Assoc	$0.02	48.47	5	$0.04	0.00	12
Queen Anne's Co Housing Auth	$7.69	39.01	6	$15.87	0.89	9
Queen Annes Soil Conserv Dist	$14.37	34.43	7	$36.85	2.07	1
Anne Arundel Co Housing Auth	$5.72	17.77	8	$16.60	0.93	7
Howard Co Housing Commission	$3.47	14.18	9	$19.51	1.10	5
Northeast Maryland Waste Disposal Auth	$0.24	0.85	10	$27.61	1.55	4
Carroll Soil Conservation Dist	$0.20	0.60	11	$33.30	1.87	3
Baltimore Co Soil Cons Dist	$0.12	0.32	12	$36.57	2.06	2
Anne Arundel Soil Conserv Dist	$0.00	0.00	13	$0.00	0.00	13
Bear Creek Watershed Association	$0.00	-	13	$0.00	-	13
Deer Creek Watershed Association	$0.00	-	13	$0.00	-	13
Harford Soil Cons Dist	$0.00	0.00	13	$0.00	0.00	13
Howard Soil Conservation Dist	$0.00	0.00	13	$0.00	0.00	13
Sawmill Creek Watershed Assoc	$0.00	-	13	$0.00	-	13

Revenue Raising Effort Versus Revenue Raising Capacity

Baltimore City had actual collections per capita for FY2002 of $1445, about a third again as large (1.37) as its hypothetical collections, $1055, the collection per capita it would achieve should it choose to tax its residents at the standard tax rate for the region.. Annapolis City was the only other general purpose government to have revenue raising efforts that exceeded its hypothetical collections, but only by a narrow margin, $939 to $924. Baltimore City is the core of the metropolitan area with a higher share of poverty, crime, brownfields, aging infrastructure, and other similar challenges that require higher levels of spending on public services. Counties and cities such as Baltimore with below average revenue-raising capacities have to generate

more actual revenue through higher tax rates and user charges than jurisdictions with higher revenue-raising capacities.

That Baltimore City experienced own source revenue raising efforts that exceeded their own source revenue raising capacity should come as no surprise, given the fact that counties and cities with below average revenue-raising capacities have to generate more revenue through higher tax rates and user charges than areas with higher revenue-raising capacities. Growth in the Baltimore Metropolitan Area has concentrated in the outer counties with increases in office space square footage, land values, and household incomes comprising typical markers of a healthy economy, outpacing the core city and county. Howard County collects the most per capita in the region, $2310, but also is second in the region and the highest for counties in hypothetical collections per capita, $2559.

Two special districts had actual collections per capita that exceeded their hypothetical revenue raising capacity, Baltimore City Housing Authority at $10.22 and $45.65 and Annapolis Housing Authority with actual collections per capita that were more than hypothetical collections per capita $16.35 and $72.02.

The Baltimore City Housing Authority had the lowest revenue raising capacity index of all of the local governments in the region (.57), but the highest revenue raising effort index (447) of all the jurisdictions in the region. Like Baltimore City and Annapolis, it has to generate more actual local revenue through higher tax rates and user charges than jurisdictions with higher revenue-raising capacities.

The coefficient of variation, which measures the dispersion of indices around the average, is 0.69 for the Baltimore metropolitan area, confirming some variation in revenue raising capacity. When we introduce the Baltimore metropolitan area special districts individually under the Expanded RRS method, a sensitivity test employed with the Baltimore case study only, the recalculated coefficient of variation is 1.13 for hypothetical capacity. This large jump in variability indicates that a significant degree of variability in revenue capacity is introduced by special district governments in the Baltimore metropolitan area. For revenue effort, the Baltimore metropolitan area shifts from .73 to 1.41, when introducing special districts, and this, then, also implies substantial additional variation across special districts' revenue efforts. The coefficient of variation drops significantly in the Baltimore metropolitan area, to .22, when the analysis is limited to large general purpose governments, indicating that there is a strong degree of variation among smaller suburban communities in Baltimore while counties and larger cities are not as dissimilar.

Sensitivity Testing

Because of the resource-expenditure challenges involved in employing the RRS method, we conducted a series of sensitivity tests to assess the comparability of the results of using alternative, less intensive, measures of revenue capacity and effort. We involved the Baltimore metropolitan area in our most extensive approach. We created two Baltimore area databases. One approach aggregated special districts into a single collective special districts "unit". The second, the most intensive method, incorporated special districts into the analysis in the same

fashion as was used for municipalities, counties, and independent cities.

Our intensive method had a near perfect correlation with our second most intensive method (0.999983), and required extensive work to locate the needed special district data. Rankings of jurisdictions were almost universally the same. The only discrepancy was that the smallest-value general purpose government flipped places with the highest scoring special district, when special districts were included. This is not a significant change to warrant utilization of the most-intensive method. The state of Maryland would have had to engage in time-consuming efforts to generate some of our needed data. In other cases, the nearly-volunteer status of other special districts made it hard for them to locate and transmit the data. What we lose by our less intensive method, however, is the significant decrease in inequities that appears through our most intensive method, as shown by the near-halving of the coefficient of variation from 1.13 to 0.69. In metropolitan areas where there are many special districts, great disparities may be masked by exclusion of special districts. In those metropolitan areas where the special districts handle many of the otherwise municipal and county responsibilities, those disparities could translate into services disparities.

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Appendix C – Las Vegas, Nevada

PURPOSE

The purpose of this section of the Appendix is to detail the application of the Representative Revenue System (RRS) to the case study of metropolitan Las Vegas, Nevada. In this section, we discuss the selection of local jurisdictions included in this case study, detail the revenues collected, document the base for each revenue that is collected, show how the revenues and their bases are used to generate estimates of revenue raising capacity and effort for this case study, and analyze revenue raising capacity and effort.

Jurisdiction Selection

The Las Vegas, Nevada Metropolitan Area includes one county, Clark County, and five cities in the 2002 Census of Governments: Boulder, Henderson, Las Vegas, Mesquite, and North Las Vegas. The Las Vegas Metropolitan Area 2000 population (1,375,765) qualified it for our case study set.[24] Census supplied 25 special districts, but the state only provided data for the 18 as seen in Table C-1.
Unlike our itemizing of special districts for our Baltimore Metropolitan Area, we did not follow this level of specificity for our Las Vegas Metropolitan Area. Maryland has a simpler local government structure, enabling easier retrieval of the necessary population figures.

Table C-1
Selected Local Governments in Metropolitan Las Vegas, Nevada, 2002

Counties	Municipalities	School and Special Districts
Clark County		Clark County Housing Authority
		Clark County Schools*
	Boulder	Boulder City Library
	Henderson	Henderson Library
	Las Vegas	Las Vegas City Housing Authority
		Las Vegas/Clark County Library District**
	Mesquite	
	North Las Vegas	North Las Vegas City Housing Authority
Multi-County		California-Nevada Super Speed Ground Transportation Commission
		Kyle Canyon Water District
		Moapa Valley TV District
		Moapa Valley Water
		Overton Power District No. 1
		Overton Power District No. 2
		Overton Power District No. 3

		Overton Power District No. 5
		Southern Nevada Conservation District
		Southern Nevada Water Authority
		Virgin Valley Water District

Types of Revenues Collected

Table C-2 lists the local own-source revenues included in our study of revenue raising capacity and effort of local governments in metropolitan Las Vegas, Nevada. The state of Nevada omits only income tax from those sources of revenue-raising that local jurisdictions are eligible to access as specified in the ACIR representative revenue-raising approach.

Table C-2
Local Government Revenue Sources Included in Metropolitan Las Vegas, Nevada

Sales Taxes	Other Taxes	Non-Tax Revenues
General Sales Taxes Total Selective Sales Taxes Public Utility Sales Other Selective Sales Taxes	Property Taxes Real Personal	General User Charges Public Utilities Charges

Data Sources for Revenues Collected

Using 2002 Census of Governments data, we determined that the county government in the Las Vegas Metropolitan Area accounted for 49.85 percent of total local own-source revenues in the metropolitan area. Cities raise 21.45 percent. Special districts collect 6.27 percent while the school district raises 22.45 percent, as show in Table C-3. We occasionally use estimation for those times when we could not locate special district data.

Table C-3
Percent of Local Own Source Revenue Collected by Jurisdiction Type, Metropolitan Las Vegas, FY2002

Las Vegas Metropolitan Area	County	Cities	School District	Special Districts
Percent total local own-source general revenue by government type	49.85%	21.45%	22.42%	6.27%

Handling Special Districts

As mentioned above, the Las Vegas metropolitan area does not have readily obtainable population for special districts. Consequently, we estimate special district bases. The first step is to calculate the total amount of revenue collected for each special district revenue source, and to calculate the total amount of revenue collected for all jurisdictions under those same sources. Then, in order to determine the special districts' proportional share of all jurisdictional bases, we divide each aggregated revenue source for the special districts' by the corresponding aggregated revenue totals of all jurisdictions to give us a revenue ratio. Multiplying this ratio by the appropriate county / independent city bases provides a proportional estimate for the special district bases for use with the special districts category. We did not verify the compatibility of regional special district boundaries to our Las Vegas metropolitan area as we did for the Baltimore case study, because we did not separately include special districts in the Las Vegas area. We found, for example, that a region-wide special district in our Maryland study included a jurisdiction not in the Baltimore Metropolitan Area. Consequently, we readjusted the revenues from this Maryland authority, omitting revenues contributed by jurisdictions extant to our study boundaries. Some special districts in the Las Vegas area, should they include territory from outside the area's boundaries, will have actual and hypothetical revenues higher than should be attributed to the study area.

Data Sources for Nevada Real and Personal Property Tax Revenue

The Census data do not provide a breakdown of property tax collections into real and personal property tax revenue. We were able to obtain the amount of revenues collected from real and personal property for counties, municipalities and special districts from Nevada for FY 2002.[25] These revenues increase by approximately 4% because of the inclusion of local and central assessment redevelopment incremental growth in certain overlapping tax districts.[26]

The revenue data collected at the state level did not equal the totals reported by the Census Bureau - this is probably a result of differences between the Census' and the state agencies' definitions of what categories are included under property taxes. The method we employed to apportion the Census data into real and personal property tax revenue was to use the state data to calculate the share of real and personal property revenue to total property tax collections for municipalities and counties and then to apply these percentages to the Census data.

Nevada officials did not provide money earned from interest and penalties on property tax as part of the other property tax revenue figures provided, so this revenue source was not added to each jurisdiction's real property revenue tax total.

Data Sources for Other Revenues

Data sources for other revenues for the Las Vegas Metropolitan Area came from the 2002 Census of Governments.

Data Sources for Tax Bases

In identifying appropriate representative tax bases, we have taken care to choose tax bases that did not reflect local government policies. This insures a base that can be comparably interpreted across all jurisdictions. Where possible, we utilized the actual tax base, but in many instances, our acquisition of the actual tax base figures would have been inordinately labor intensive, and thus costly and time-consuming. We therefore obtained surrogate representative bases. This section outlines the economic tax bases selected, the data sources used, and any calculations made to estimate an appropriate tax base. We note that some of the tax bases came from 2002 Census of Governments, and some from the 2000 Census of Population. A significant shift in population, as has happened in the Las Vegas metropolitan area can create misleading per capita figures. For example, the Las Vegas metropolitan area, represented in this study by Clark County, grew from its Census 2000 population of 1,375,765 to a Census-estimated 1,522,164 in July 1, 2002[27], an increase of 9.62%. As an example of the impact the mismatch creates, using the estimated population for 2002 so as to match the financial data year reduces the hypothetical collections per capita for Clark County from $1831 to $1655.

Property Tax Base

Nevada uses a mixed valuation assessment model based on the cost approach, according to a state official.[28] In Nevada in FY2002, land was assessed at full cash market value. Vacant land is valued at its highest and best use. Improved land is valued at its actual use, using Marshall & Swift replacement cost new less statutory depreciation of 1.5% per year with a 25% residual. Properties are reassessed for tax billing once every year and property owners are notified of any change in their assessment.[29]

In Nevada, real and personal property assessments were obtained from annual reports issued by the State Department of Taxation and from a data file compiled by a Department of Taxation official for this report.[30]

Certain property assessment data are only available at the county level. These include property assessments net exemptions, centrally-assessed properties net exemptions, [31] and local personal property apportioned separately from centrally-assessed properties. This required use of ratios for estimation in some instances, or necessitated excluding some data in other cases.

In the case of central assessment of certain specialized properties, including mining, private carlines, and some utilities, plus net proceeds of minerals, we decided to apportion the data.[32] As noted above, assessment figures and exempted property values for these centrally-assessed properties are available only at the county level so we prorated the data across the local jurisdictions. A state official noted that the state process of central assessment apportionment made it impossible to derive separate values for land, improvements or personal property for municipalities, hence the need to apportion across municipalities.[33] The Clark County Assessor, Manager of Technical Support, explained that centrally-assessed property can be a large amount of value in Nevada.[34]

Another apportionment was necessary for assessments of local and central assessment redevelopment incremental growth in certain overlapping tax districts.[35]

Real Property Base

The real property tax base is defined as the fair market value of all real estate property in each jurisdiction, excepting property that is typically exempt from taxation (i.e. government property, churches, nonprofits). Real property assessments were available from the state.[36] The assessed value in Nevada is 35% of the total appraised value of the property.[37]

Personal Property Base

All property that is not defined or taxed as real estate or real property is considered to be personal property under Nevada statutes.[38] It includes manufactured homes, aircraft, and all property used in conjunction with a business.[39] In July 2004, over 31,000 manufactured homes were in the state.[40] Nevada permits conversion of manufactured homes from personal property status to real property, if certain qualifications are met, including ownership of the home and the land where it is located.[41] Las Vegas includes as business personal property all hotel and gambling equipment as well as other equipment, which can be substantial.[42]

In Nevada, personal property assessments were available through the same reports that provided real property assessments.[43]

General Sales Tax Base

The representative tax base for the general sales tax is the aggregate value of taxable retail sales in 2002. It was available for the county, the included cities, and selected special districts from the 2002 Economic Census.[44] .

Selective Sales Taxes Base

Census defines Selective Sales Taxes as taxes imposed on the sale of particular commodities or services or on the gross receipts of particular businesses separately and apart from the General Sales tax. The U.S. Advisory Commission on Intergovernmental Relations included nine separate selective sales taxes in their calculations of Representative Revenue Systems for the 50 states. However, many of these selective sales taxes are state only revenue sources. For example, the ACIR includes in its measures selective sales taxes on motor fuel, insurance premiums and alcohol. Local governments typically do not have access to these revenue sources so we have excluded them from our estimates of local own-source revenue raising capacity. However, based on the experiences of local governments in this study area, we include selective sales taxes on public utilities, and other selective sales taxes.

Selective sales taxes on public utilities include taxes on transportation companies, telephones, telegraphs and light and power. The base of the tax is generally the gross receipts or gross earnings of the company providing the service. Sometimes the tax may be based on the number of units sold, e.g. kilowatt-hours of electricity. In either case, however, the base of the tax

reflects consumption decisions by individual consumers. As a result, we use aggregate personal income for 1999 as the representative base for selective sales taxes.

Aggregate personal income for 1999 was obtained for all local jurisdictions from the 2000 Census of Population.[45] The U.S. Bureau of Economic Analysis published estimated aggregated personal income for 2001 and for 2002, but they generate the figures for counties only. This necessitated use of the 2000 Census of Population, because figures were available for counties and municipalities. Use of the 2000 Census of Population aggregate income data results marginally skews our results, because we expect incomes to be higher in 2002. Consequently, our usage of the 2000 Census of Population data (again, which reports aggregate personal income for 1999) to generate revenue raising capacity levels introduces a bias into our hypothetical revenue raising capacity figures, making them marginally higher than they otherwise would be. For a fast growing metropolitan area such as Las Vegas, the discrepancy may be more inflated than for a more moderately-growing metropolitan area.

Other Selective Sales Taxes

According to the Census Bureau definitions, Other Selective Taxes include taxes on specific commodities, businesses, or services not reported separately under selective sales taxes. For example, this would include taxes on contractors, lodging, lubricating oil, fuels other than motor fuel, motor vehicles, meals, soft drinks, margarine, etc. Unfortunately, the Census data do not break down total revenues from other selective sales taxes into these component parts. As a result, we use aggregate personal income for 1999 as the representative base for other selective sales taxes. Aggregate personal income for 1999 was obtained for all jurisdictions from the 2000 Census of Population.[46] As noted earlier, this introduces a bias into our hypothetical revenue raising capacity figures, making them marginally higher than they otherwise would be.

Income Tax Base

Nevada does not have an income tax.

User Charges Base

According to the Census Bureau definition, Current Charges reflect "Amounts received from the public for performance of specific services which benefit the person charged and from sale of commodities or services." Basically, Current Charges are user charges, which reflect the consumption decisions of individual citizens. Thus, revenue generated from user charges depends, in large part, on prices charged and the resulting consumption choices of individual citizens. For the purposes of this study, then, we use aggregate personal income for 1999.[47] as the representative base for general user charges, recognizing the limitations covered above.

Public Utilities Base

For the purposes of this study, Public Utility charges include revenues from water, electric, gas, and transit utilities. In each case, there is a charge for the service being provided – essentially making these revenues comparable to user charges. As a result, we use aggregate personal

income for 1999 as the representative base for user charges, remembering the concerns expressed in earlier sections.[48]

EMPIRICAL RESULTS

We generated revenue raising capacity and revenue raising effort for all jurisdictions and these are presented alphabetically below (Table C-4), followed by analysis.

Table C-4
Revenue Raising Capacity and Effort of
Local Governments in the Las Vegas Metropolitan Area, FY2002

Local Jurisdictions	Revenue Raising Capacity			Revenue Raising Effort		
	Total Hypothetical Collections Per Capita	Index	Rank	Actual Collections Per Capita	Index	Rank
Clark County	$1,830.77	100.00	4	$912.73	49.85	3
Boulder City	$2,144.37	117.13	2	$1,229.99	57.36	2
Henderson City	$2,156.75	117.81	1	$799.10	37.05	4
Las Vegas City	$1,655.41	90.42	6	$553.11	33.41	6
Mesquite City	$1,937.47	105.83	3	$663.01	34.22	5
North Las Vegas City	$1,271.96	69.48	7	$960.33	75.50	1
School District	$1,830.77	100.00	4	$410.55	22.43	7
Summary Statistics						
Maximum	$2,156.75	117.81		$1,229.99	75.50	
Minimum	$1,271.96	69.48		$410.55	22.43	
Range	$884.79	48.33		$819.44	53.08	
Standard Deviation	$334.36	18.26		$295.42	19.44	
Mean	$1,832.79	100.11		$769.35	43.33	
Coefficient of variation	0.18	0.18		0.38	0.45	

Revenue Raising Effort

In the Las Vegas Metropolitan Area, revenue raising effort indexes were higher in North Las Vegas City, as shown in the data in Table C-5. No jurisdictions shown had indexes above 100, which means that the combined special districts measure totaled over 100. We were not able to create a hypothetical capacity per capita index because we lacked populations numbers for the special districts. North Las Vegas City had the highest effort at 75.50 while the school district was lowest with 22.43.

Revenue Raising Capacity

Five of the seven jurisdictions maintained indexes at or over the metropolitan average for revenue raising capacity. Only Las Vegas City and North Las Vegas City were not. This indicates that, compared to all jurisdictions in the region, these two cities have a below average ability to raise revenues compared to the regional average.

Revenue Raising Effort Versus Revenue Raising Capacity

Not one jurisdiction showed actual collections to be higher than hypothetical collects, an indication that they all were meeting revenue needs without their hypothetical capacity, that is the amount they could collect if they taxed at the average rate for the metropolitan area.

Table C-5
Revenue Raising Capacity and Effort of
Local Governments in the Las Vegas Metropolitan Area, FY2002
by Rank on Revenue Raising Effort

	Revenue Raising Effort			Revenue Raising Capacity		
	Actual Collections per Capita	Index	Rank	Total Hypothetical Collections per Capita	Index	Rank
Nevada			-			
North Las Vegas City	$ 960.33	75.50	1	$ 1,271.96	69.48	7
Boulder City	$ 1,229.99	57.36	2	$ 2,144.37	117.13	2
Clark County	$ 912.73	49.85	3	$ 1,830.77	100.00	4
Henderson City	$ 799.10	37.05	4	$ 2,156.75	117.81	1
Mesquite City	$ 663.01	34.22	5	$ 1,937.47	105.83	3
Las Vegas City	$ 553.11	33.41	6	$ 1,655.41	90.42	6
School District	$ 410.55	22.43	7	$ 1,830.77	100.00	4

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Appendix D – Miami, Florida

PURPOSE

The purpose of this section of the Appendix is to detail the application of the Representative Revenue System (RRS) to the case study of Miami, Florida. We describe the process used to select the jurisdictions, revenues and tax bases included in our analysis. We then show how the revenues and tax bases are used to generate the estimates of revenue capacity and effort for this case study.

Jurisdiction Selection

When selecting the jurisdictions to include in our analysis, we started with the U.S. Census Bureau's definition of the Miami-Miami Beach-Kendall, FL Metropolitan Division, which includes Miami-Dade County and all of the encompassed municipalities, special districts and school districts appearing in the 2002 Census of Governments. Table D-1 contains a complete listing of all of the Miami area local governmental units included in the Census of Governments data. Because of data constraints, time limitations and issues regarding the relevance to our study, we modified the Census of Governments' jurisdictional definitions.

First, individual special districts in the Miami-Miami Beach-Kendall, FL Metropolitan Division were not included as individual units in our analysis. Special district revenues accounted for 0.23% of total own source revenues in the Miami region, however data on special district boundaries and tax bases were unavailable to us. Therefore, instead of analyzing individual special districts' fiscal capacities, we included special districts' revenues in Dade County's total revenues. The only source of revenues for special districts in Dade County was Housing and Community Development Charges. Therefore, we inflated Dade County's Housing and Community Development Charges revenues to reflect the special district revenues. Dade County itself independently generated housing and community development charges of $14,009,000, and special districts in Dade County generated housing and community development charges of $10,968,000. In our final analysis, it therefore appeared that Dade County generated $24,977,000 in Housing and Community Development Charges.

Second, because community college districts are usually considered a responsibility of the state, Miami-Dade Community College was excluded from our analysis. Third, the City of Islandia was included in our analysis independently because Islandia only has a population of six people and did not raise any own source revenues in 2002. Islandia's property tax base and personal income were included in the tax base for Dade County, however.

Table D-1
All Local Governments in the Miami-Miami Beach-Kendall, FL
Metropolitan Division
Census of Governments, 2002

County	Municipalities	Special Districts*	School Districts
Dade County	Aventura City	Homestead City Housing Auth	Miami-Dade Co Public Sch Dist
	Bal Harbour Village	Miami Beach Housing Auth	Miami-Dade Community College*
	Bay Harbor Islands Town	South Dade Soil & Water Consv Dist	
	Biscayne Park Village	Beacon Tradeport Community Dev Dist	
	Coral Gables City	Century Parc Community Dev Dist	
	El Portal Village	Sunny Isle Reclam & Water Dist	
	Florida City	Hialeah Housing Auth	
	Golden Beach Town		
	Hialeah City		
	Hialeah Gardens City		
	Homestead City		
	Indian Creek Village		
	Islandia City*		
	Key Biscayne City		
	Medley Town		
	Miami Beach City		
	Miami City		
	Miami Shores City		
	Miami Springs City		
	North Bay Village		
	North Miami Beach City		
	North Miami City		
	Opa-Locka City		
	Pinecrest City		
	South Miami City		
	Sunny Isles Beach City		
	Surfside Town		
	Sweetwater City		

	Virginia Gardens Village		
	West Miami City		

* Indicates that jurisdiction or category of jurisdictions was omitted from our analysis.

Data Sources for Revenues Collected

In order to use revenue collection data that are comparable across all local jurisdictions, we used revenue data from the U.S. Census Bureau 2002 Census of Governments. However, not all revenue sources included in the Census of Governments Finance data were included in our study. For a detailed explanation of the excluded revenue sources, please refer to Exhibit A in Appendix A.

Table D-2 lists the local own-source revenues that were included in our study for local governments in metropolitan Miami, Florida.

Table D-2
Local Government Revenue Sources,
Included in the Miami, Florida Metropolitan Division

Other Taxes	Sales Taxes	Non-Tax Revenues
Property Taxes	Gross Sales & Receipts Taxes	User Charges
Real	General Sales Taxes	Public Utilities
Personal	Selective Sales Taxes	
	Public Utilities	
	Other Selective Sales	

Table D-3 contains the proportion of local own source revenues collected by each type of jurisdiction. Using 2002 Census of Government data, we determined that the three county governments in the Miami metropolitan area accounted for 16.9% of the total local own-source revenues in the metropolitan area. Municipalities accounted for 35.0% of total local own-source revenues, towns accounted for 1% of total own source revenues school districts accounted for 42.6% and non-educational special districts accounted for 4.5%.

Table D-3
Percent of Local Own Source Revenue Collected by Jurisdiction Type, Metropolitan Miami, FY2002

Miami Metropolitan Area	County	Municipalities	School Districts	Special Districts (Non Educational)
Percent of total local own-source general revenue	49.37%	24.53%	25.87%	0.23%

Apportioning Property Tax Revenue

The Census data do not provide a breakdown of property tax collections into real and personal property tax revenue. Therefore, we obtained the municipal-level breakdown of real and personal property tax revenues from the Miami-Dade County Tax Collector. The property tax revenue totals reported by the Miami-Dade CountyTax Collector did not match the Census of Governments' property tax revenue figures. Therefore, we used Miami-Dade County Tax Collector's data to determine the proportion of revenue received from real and personal property taxes. We then applied those proportions to the Census of Governments' total property tax revenue figure in order to get an estimation of the revenue received from real and personal property taxes.

Data Sources for Tax Bases

This section outlines the economic tax bases that we selected, the data sources used, and any calculations made to estimate an appropriate tax base.

Property Tax Base

For all counties, municipalities and school districts in the Miami area, property tax base assessments were obtained from the Florida Department of Revenue.[49] However, the Florida Department of Revenue does not break down municipal property tax base data into real and personal property. Real and personal property tax base data are only available at the county level. Therefore, we estimated the municipal-level real and personal property tax bases based upon the proportion of the county property tax base that comes from real and personal property. To do this, we figured out the proportions of the county property tax base that come from real and personal property and applied these same proportions to each municipality.

Further, the value of Homeowner's Exemptions were added back into the property tax base for Dade County and all municipalities. These data were obtained from the Florida Department of Revenue.[50]

Real Property Base

Counties, school districts, municipalities, and special districts in Florida are permitted to levy a real property tax. However, no special districts in the Miami area levy a property tax. The real property tax can be imposed on all property in the county. The limitations are 10 mills for county purposes, ten mills for municipal purposes and ten mills for school purposes.

Personal Property Base

In Florida, Counties, school districts, municipalities, and special districts can levy personal property taxes on any personal property from which value can be derived. Neither schools nor special districts in Miami levied a personal property tax.

General Sales Tax

Florida counties, municipalities and school districts are authorized to levy a discretionary sales tax on all sales, uses, services, rentals and admissions that are subject to the state sales tax. Local sales taxes cannot exceed 1.5%.
Total taxable sales are the base of the sales tax, however total taxable sales are only available at the county level in Florida.[51] We therefore used the 2002 Economic Census total retail sales data as the base for the sales tax in each jurisdiction.[52]

Selective Sales Taxes

The U.S. Census Bureau defines Selective Sales Taxes as taxes imposed on the sale of particular commodities or services or on the gross receipts of particular businesses separately and apart from the General Sales tax. The Advisory Commission on Intergovernmental Relations included nine separate selective sales taxes in their calculations of Representative Revenue Systems for the 50 states. However, many of these selective sales taxes are state only revenue sources. For example, the ACIR includes in its measures selective sales taxes on motor fuel, insurance premiums and alcohol. Local governments typically do not have access to these revenue sources so we have excluded them from our estimates of local own-source revenue raising capacity. However, based on the experiences of local governments in our study area, we do include selective sales taxes on public utilities, and other selective sales taxes.

Selective sales taxes on public utilities include taxes on transportation companies, telephones, telegraphs and light and power. The base of the tax is generally the gross receipts or gross earnings of the company providing the service. Sometimes the tax may be based on the number of units sold, e.g. kilowatt-hours of electricity. In either case, however, the base of the tax reflects consumption decisions by individual consumers. As a result, we use personal income for 2000 as the representative base for user charges. Personal income for all local jurisdictions was obtained from the 2000 Census of Population.

Other Selective Sales Taxes

According to the Census Bureau definitions, Other Selective Taxes include taxes on specific commodities, businesses, or services not reported separately under selective sales taxes. For example, this would include taxes on contractors, lodging, lubricating oil, fuels other than motor fuel, motor vehicles, meals, soft drinks, margarine, etc.

Unfortunately, the Census of Governments does not break total selective sales tax revenues down into its component parts, making it impossible to tell how much revenue is received from the different types of selective sales taxes. Therefore, because we had to use total selective sales taxes as our unit of analysis, we chose to use personal income for 2000 as the representative base for selective sales taxes. Personal income for all counties, municipalities and towns was obtained from the 2000 Census of Population.

User Charges Base

According to the Census Bureau definition, Current Charges reflect "Amounts received from the public for performance of specific services which benefit the person charged and from sale of commodities or services." Basically, Current Charges are user charges, which reflect the consumption decisions of individual citizens. Thus, revenue generated from user charges depends, in large part, on prices charged and the resulting consumption choices of individual citizens. Therefore, we chose to use personal income for 2000 as the representative base for selective sales taxes.

Public Utilities Base

For the purposes of this study, Public Utility revenues include revenues from water utilities and transit authorities. In each case, there is a charge for the service being provided – essentially making these revenues comparable to user charges. As a result, we use personal income for 2000 as the representative base for user charges.

Fiscal Capacity and Effort Calculations

After the data on revenue collections and the representative, standard revenue bases are collected, there are basically five calculations made in order to determine the fiscal capacity and effort indices. These calculations are detailed below using San Francisco's real property tax revenue as an example.

Average Tax Rate – 2002

The first step, after data collection, is to calculate the **average tax rate** for each revenue base by dividing the total collections of all local jurisdictions by the total base for that revenue source.

1)	Real Property Tax Revenue All Local Governments		Real Property Tax Base All Local Governments		Avg. Real Property Tax Rate
	$2,121,083,796	/	$107,102,086,702	=	1.98 %

Hypothetical Yield or Revenue Capacity

The **potential, or hypothetical, revenue** that a local government can generate is calculated by applying the average tax rate for each revenue source to the appropriate standard, representative base.

2)	City of Miami's Real Prop. Tax Base		Avg. Real Prop. Tax Rate		Hypothetical Real Prop. Revenue
	$16,100,197,278	X	1.98%	=	$318,853,429

Per Capita Hypothetical Yield, or Revenue Capacity

The hypothetical revenue is then divided by the local government's population to arrive at the **per capita hypothetical revenue capacity.**

3)	Hypothetical Real Prop. Revenue		Miami's Population		Hypothetical Real Property Tax Revenue Per Capita
	$318,853,429	/	362,470	=	$ 879.67

Revenue Capacity Index

The **revenue capacity index** is determined by dividing the county's hypothetical real property tax revenues per capita by the hypothetical per capita real property tax collections for all local governments and multiplying by 100.

4)	Miami's Hypothetical Real Prop. Revenue per Capita		Total Metro Hypothetical Real Prop. Collections Per Capita		Miami's Real Property tax Capacity Index
	($879.67	/	$ 941.30) x 100	=	93.45

The above calculations are done for each revenue source as well as for total revenue and then aggregated to obtain one measure of fiscal capacity.

Revenue Effort Index

The **revenue effort index** is calculated by dividing each local government's actual collections per capita by its hypothetical yield, or revenue capacity, per capita and then multiplying by 100. Below Miami's fiscal effort index is calculated for its real property revenues.

5)	Miami's Per Capita Actual Collections for Real Property Revenues		Miami's Per Capita Hypothetical Collections for Real Property Revenues			Fiscal Effort Index
(	$ 352.42	/	$ 879.67	)	x 100	= 40.18

Again, these calculations are done for each revenue source.

EMPIRICAL RESULTS

Table D-4 contains the results of our revenue raising capacity and revenue raising effort calculations for the Miami Metropolitan Area.[53] As the table depicts, the City of Miami's revenue capacity index of 88 is lower than the average revenue capacity for the region (which is 100). In addition, Miami's revenue effort index, which is 44, is also below the regional average effort index. Miami ranks 17th out of the 30 jurisdictions in revenue capacity and 13th in revenue effort.

Table D-4
Revenue Raising Capacity and Effort of
Local Governments in the Miami Metropolitan Area, FY2002

Local Jurisdictions	Revenue Raising Capacity			Revenue Raising Effort		
	Total Hypothetical Collections Per Capita	Index	Rank	Actual Collections per Capita	Index	Rank
Metropolitan Miami	1,837	100		1,837	100	
Medley Town	15,654	852	1	9,593	61	2
Golden Beach Town	11,538	628	2	2,605	23	19
Bal Harbour Village	10,130	551	3	1,949	19	25
Key Biscayne City	8,460	461	4	1,122	13	20
Coral Gables City	5,479	298	5	1,550	28	21
Aventura City	5,200	283	4	1,712	33	17
Pinecrest City	5,022	273	7	549	11	14
Surfside Town	4,494	245	8	1,326	29	6
Sunny Isles Beach City	4,096	223	9	416	10	15
Miami Beach City	3,792	206	10	2,114	56	5
Bay Harbor Islands Town	2,890	157	8	951	33	19
South Miami City	2,753	150	12	714	26	13
Miami Shores City	2,230	121	13	711	32	16
Virginia Gardens Village	2,168	118	14	340	16	14
Miami Springs City	2,090	114	15	1,070	51	8
North Bay Village	1,850	101	16	673	36	14

Dade County	1,837	100	5	880	48	10
Biscayne Park Village	1,794	98	9	850	47	12
Miami City	**1,619**	**88**	**17**	**709**	**44**	**13**
West Miami City	1,579	86	21	577	37	9
Miami-Dade Co Public Sch Dist	1,529	83	22	3,311	217	1
North Miami Beach City	1,472	80	21	1,000	68	5
Hialeah Gardens City	1,334	73	15	336	25	19
El Portal Village	1,238	67	11	289	23	16
North Miami City	1,154	63	23	571	49	11
Hialeah City	1,131	62	14	596	53	7
Opa-Locka City	1,061	58	24	927	87	5
Homestead City	1,017	55	16	1,394	137	4
Florida City	977	53	12	508	52	7
Sweetwater City	910	50	29	159	18	24
Summary Statistics						
Maximum	15,654	852		9,593	217	
Minimum	910	50		159	10	
Range	14,744	803		9,434	206	
Standard Deviation	3,559	194		1,720	41	
Mean	3,550	193		1,317	46	
Coefficient of Variation	1.003	1.003		1.306	0.895	
Correlation between Capacity & Effort Indices		-0.225				

There is substantial variation in revenue capacity and effort among the suburbs in the Miami metropolitan area. Revenue capacity index values range from a high of 852 to a low of 50. Sixteen jurisdictions in Miami have revenue capacity indices above average, while thirteen jurisdictions have below-average revenue capacities. Because the Miami Metropolitan Area is comprised of only one county, Dade County's fiscal capacity index is equal to the metropolitan average, or 100. The coefficient of variation for revenue capacity in Metropolitan Miami is 1.003.

There is far less variation in fiscal effort indices in Miami. Fiscal effort indices range from a high of 217 to a low of 10. The coefficient of variation for fiscal effort in Miami is 0.895.

The correlation between fiscal capacity and fiscal effort in the Miami Metropolitan Area is -.0225, indicating almost no relationship between fiscal capacity and fiscal effort in the Metropolitan Miami region.

Appendix E – Milwaukee, Wisconsin

PURPOSE

The purpose of this section of the Appendix is to detail the application of the Representative Revenue System (RRS) to the case study of Milwaukee, Wisconsin. We describe the process used to select the jurisdictions, revenues and tax bases included in our analysis. We then show how the revenues and tax bases are used to generate the estimates of revenue capacity and effort for this case study.

Jurisdiction Selection

When selecting the jurisdictions to include in our analysis, we started with the U.S. Census Bureau's definition of Milwaukee-Waukesha-West Allis, WI Metropolitan Division, which includes Milwaukee County, Ozaukee County, Washington County, Waukesha County and all of the encompassed municipalities, special districts and school districts appearing in the 2002 Census of Governments. Table E-1 contains a complete listing of all of the Milwaukee area local governmental units included in the Census of Governments data (see the Referenced Tables section at the end of Appendix E for Table E-1). Because of data constraints, time limitations and issues regarding the relevance to our study, we modified the Census of Governments' jurisdictional definitions.

First, individual special districts in the Milwaukee-Waukesha-West Allis Metropolitan Division were not included as individual units in our analysis. Special district revenues accounted for 4.5% of total own source revenues in the Milwaukee region, however data on special district boundaries and tax bases were unavailable to us. Therefore, instead of analyzing individual special districts' fiscal capacities, we included special districts' revenues in county totals. For example, Milwaukee County, WI independently generated property tax revenues of $191,397,000, while special districts in Milwaukee County generated property tax revenues of $66,918,000. In order to reflect the revenue-raising capabilities of special districts in our analysis, we included the special districts' property tax revenues in the county total. In our final analysis, it therefore appeared that Milwaukee County generated $258,315,000 in property tax revenues. This was done for each revenue item in Milwaukee, Washington and Waukesha Counties. The two special districts in Ozaukee County did not generate any revenue in 2002, and it was therefore unnecessary to perform the above calculation.

Second, individual towns in the Milwaukee metropolitan area were also omitted from our analysis. Town revenues accounted for 1% of total own source revenues in metropolitan Milwaukee. However, because of time and data constraints, we were unable to individually analyze each town. Therefore, like special districts, we included town revenues in the county totals. For instance, Ozaukee County independently generated $12,044,000 in property tax revenue, and towns in Ozaukee County generated $2,634,000 in property tax revenue. We added town property tax revenues to the total county property tax revenues, so that it appeared that Ozaukee County generated $14,678,000 in property tax revenues. This was done for each

revenue item in Ozaukee, Washington and Waukesha Counties. There are no towns in Milwaukee County.

Third, because adult and community college districts are usually considered a responsibility of the state, two adult educational districts (Milwaukee Area Vocational-Technical-Adult Education District and Waukesha Area Vocational-Technical-Adult Education District) were excluded from our analysis.

Fourth, there are four cities and one town in the Milwaukee metropolitan area that have land in multiple counties. For example, the city of Milwaukee has land in Milwaukee, Washington and Waukesha Counties. The Census of Governments considers jurisdictions to be a part of the county in which the majority of their land resides. Therefore, in the 2002 Census of Governments data, the city of Milwaukee appears to be located in Milwaukee County only. We followed the Census of Governments practice when collecting data for the study, and we classified cities and towns in the same manner when collecting property tax revenue data and all other tax base data.

Data Sources for Revenues Collected

In order to use revenue collection data that are comparable across all local jurisdictions, we used revenue data from the U.S. Census Bureau 2002 Census of Governments. However, not all revenue sources included in the Census of Governments Finance data were included in our study. For a detailed explanation of the excluded revenue sources, please refer to Exhibit A in Appendix A.

Table E-2 lists the local own-source revenues that were included in our study for local governments in metropolitan Milwaukee, Wisconsin.

Table E-2
Local Government Revenue Sources,
Included in the Milwaukee, Wisconsin Metropolitan Division

Other Taxes	Sales Taxes	Non-Tax Revenues
Property Taxes	Gross Sales & Receipts Taxes	User Charges
Real	General Sales Taxes	Public Utilities
Personal	Selective Sales Taxes	
	Public Utilities	
	Other Selective Sales	

Table E-3 contains the proportion of local own source revenues collected by each type of jurisdiction. Using 2002 Census of Government data, we determined that the four county

governments in the Milwaukee metropolitan area accounted for 16.9% of the total local own-source revenues in the metropolitan area. Municipalities accounted for 35.0% of total local own-source revenues, towns accounted for 1% of total own source revenues school districts accounted for 42.6% and non-educational special districts accounted for 4.5%.

Table E-3
Percent of Local Own Source Revenue Collected by Jurisdiction Type, Metropolitan Milwaukee, 2002

Milwaukee Metropolitan Area	County	Municipalities	Towns	School Districts	Special Districts (Non Educational)
Percent of total local own-source general revenue	16.9%	35.0%	1.0%	42.6%	4.5%

Apportioning Property Tax Revenue

The Census data do not provide a breakdown of property tax collections into real and personal property tax revenue. Therefore, we obtained the municipal-level breakdown of real and personal property tax revenues from the Wisconsin Department of Revenue.[54] The property tax revenue totals reported by the Wisconsin Department of Revenue did not match the Census of Governments' property tax revenue figures. Therefore, we used the Wisconsin Department of Revenue data to determine the proportion of revenue received from real and personal property taxes, and applied those proportions to the Census of Governments' total property tax revenue figure in order to get an estimation of the revenue received from real and personal property taxes.

Data Sources for Tax Bases

This section outlines the economic tax bases that we selected, the data sources used, and any calculations made to estimate an appropriate base for each revenue source.

Property Tax Base

For all counties, municipalities, towns and school districts in the Milwaukee area, property tax base assessments were obtained via telephone request from the Milwaukee Department of Revenue.[55] [56]

Real Property Base

The real property tax base is defined as the market value of all property in each jurisdiction, except property that is typically exempt from taxation (i.e. government property, churches, and

nonprofit organizations). This includes residential (land and improvements), commercial (land and improvements), manufacturing (land and improvements), and agricultural (swamp, waste and forest lands) property. A tax can be levied on the estimated fair market value of the property, which is the result rounded to the nearest $100 obtained when the total assessed value of a parcel of real property is determined.

Personal Property Base

In Wisconsin, local governments can levy personal property taxes on tangible and intangible property that is not considered real property. This includes items such as, boats, machinery, tools, furniture, fixtures, stamps, coins, repairs and supplies.

General Sales Tax

Wisconsin counties are authorized to levy a discretionary sales surtax on most transactions subject to state sales and use taxes that are purchased within the county. The county is authorized to impose a maximum rate of 0.5 percent. Those districts that have the baseball park are authorized to issue an additional 0.1 percent sales tax. Those districts that have a football stadium are authorized to impose an additional 0.5 percent sales tax.
Taxable receipts are the base of the sales tax. Taxable receipts data for Milwaukee, Ozaukee and Washington Counties were obtained from the Wisconsin Department of Revenue.[57] Waukesha County does not levy a sales tax.

Selective Sales Taxes

The U.S. Census Bureau defines Selective Sales Taxes as taxes imposed on the sale of particular commodities or services or on the gross receipts of particular businesses separately and apart from the General Sales tax. The Advisory Commission on Intergovernmental Relations included nine separate selective sales taxes in their calculations of Representative Revenue Systems for the 50 states. However, many of these selective sales taxes are state only revenue sources. For example, the ACIR includes in its measures selective sales taxes on motor fuel, insurance premiums and alcohol. Local governments typically do not have access to these revenue sources so we have excluded them from our estimates of local own-source revenue raising capacity. However, based on the experiences of local governments in our study area, we do include selective sales taxes on public utilities, and other selective sales taxes.

Selective sales taxes on public utilities include taxes on transportation companies, telephones, telegraphs and light and power. The base of the tax is generally the gross receipts or gross earnings of the company providing the service. Sometimes the tax may be based on the number of units sold, e.g. kilowatt-hours of electricity. In either case, however, the base of the tax reflects consumption decisions by individual consumers. As a result, we use personal income for 2000 as the representative base for user charges. Personal income for all local jurisdictions was obtained from the 2000 Census of Population.

Other Selective Sales Taxes

According to the Census Bureau definitions, Other Selective Taxes include taxes on specific commodities, businesses, or services not reported separately under selective sales taxes. For example, this would include taxes on contractors, lodging, lubricating oil, fuels other than motor fuel, motor vehicles, meals, soft drinks, margarine, etc. In Wisconsin, taxes on services and short term lodging are large components of the Other Selective Sales Tax revenues.

Unfortunately, the Census of Governments does not break total other selective sales tax revenues down into its component parts, making it impossible to tell how much revenue is received from the different types of selective sales taxes. Therefore, because we had to use total other selective sales taxes as our unit of analysis, we chose to use personal income for 2000 as the representative base for selective sales taxes. Personal income for all counties, municipalities and towns was obtained from the 2000 Census of Population. Personal income for school districts was obtained from the Wisconsin Department of Revenue.[58]

User Charges Base

According to the Census Bureau definition, Current Charges reflect "Amounts received from the public for performance of specific services which benefit the person charged and from sale of commodities or services." Basically, Current Charges are user charges, which reflect the consumption decisions of individual citizens. Thus, revenue generated from user charges depends, in large part, on prices charged and the resulting consumption choices of individual citizens. Therefore, we chose to use personal income for 2000 as the representative base for selective sales taxes.

Public Utilities Base

For the purposes of this study, Public Utility revenues include revenues from water utilities and transit authorities. In each case, there is a charge for the service being provided – essentially making these revenues comparable to user charges. As a result, we use personal income for 2000 as the representative base for user charges.

Revenue Capacity and Effort Calculations

After the data on revenue collections and the representative, standard revenue bases are collected, there are basically five calculations made in order to calculate the revenue capacity and effort indices. These calculations are detailed below using San Francisco's real property tax revenue as an example.

Average Tax Rate – 2002

The first step, after data collection, is to calculate the **average tax rate** for each revenue source by dividing the total collections of all local jurisdictions by the total base for that revenue source.

1)	Real Property Tax Revenue All Local Governments		Real Property Tax Base All Local Governments		Avg. Real Property Tax Rate
	$849,719,201	/	$78,454,650,529	=	1.08 %

Hypothetical Yield or Revenue Capacity

The **potential, or hypothetical, revenue** that a local government can generate is calculated by applying the average tax rate for each revenue source to the appropriate standard, representative base.

2)	Milwaukee City's Real Prop. Tax Base		Avg. Real Prop. Tax Rate		Hypothetical Real Prop. Revenue
	$16,792,681,794	X	1.08%	=	$181,876,588

Per Capita Hypothetical Yield, or Revenue Capacity

The hypothetical revenue is then divided by the local government's population to arrive at the **per capita hypothetical revenue capacity.**

3)	Hypothetical Real Prop. Revenue		Milwaukee's Population		Hypothetical Revenue Per Capita
	$181,876,588	/	596,974	=	$ 304.66

Revenue Capacity Index

The revenue **capacity index** is determined by dividing the county's hypothetical real property tax revenues per capita by the total per capita real property tax collections for all local governments and multiplying by 100.

4)	Milwaukee's Hypothetical Real Prop. Revenue per Capita		Total Local Govt. Hypothetical Prop. Collections Per Capita		Milwaukee's Property Tax Capacity Index
	($304.66	/	$ 566.20) x 100	=	53.81

The above calculations are done for each revenue source as well as for total revenue and then aggregated to obtain one measure of fiscal capacity.

Revenue Effort Index

The **revenue effort index** is calculated by dividing each local government's actual collections per capita by its hypothetical yield, or revenue capacity, per capita and then multiplying by 100. Below Milwaukee's fiscal effort index is calculated for its total real property tax revenues.

5) Milwaukee's Per Capita Actual Collections for Total Real Property Tax Revenues / Milwaukee's Per Capita Hypothetical Collections for Total Real Property Tax Revenues) x 100 = Property Tax Effort Index

($ 329.47 / $ 304.66) x 100 = 53.81

Again, these calculations are done for each revenue source.

EMPIRICAL RESULTS

Table E-4 contains the results of our fiscal capacity and fiscal effort calculations for the Milwaukee Metropolitan Area. As the table depicts, the City of Milwaukee has a fiscal capacity that is lower than most of the other jurisdictions in the region. Milwaukee ranks 107th out of the 115 jurisdictions in the Metropolitan Area in fiscal capacity. Conversely, Milwaukee ranks 12th in the region in fiscal effort. This indicates that the City of Milwaukee must have a relatively high tax effort in order to account for its very low tax base.

There are significant disparities in the revenue capacity and effort between jurisdictions in the Milwaukee Metropolitan Area. Revenue capacity indices range from 742 to 10. The standard deviation for revenue capacity indices is 105, and the coefficient of variation is .77. Fiscal effort indices in the region have a smaller range than the effort indices, as the high is 512 and the low is 2. However, the effort indices themselves vary more than the capacity indices, as their coefficient of variation is 1.16.

Table E-4
Revenue Raising Capacity and Effort of
Local Governments in the Milwaukee Metropolitan Area, FY2002

Local Jurisdictions	Revenue Raising Capacity			Revenue Raising Effort		
	Total Hypothetical Collections per Capita	Index	Rank	Actual Collections per Capita	Index	Rank
Chenequa Village	13,651	742	1	2,213	16	106
Merton Village	12,113	658	2	269	2	115
Maple Dale-Indian Hill	10,122	550	3	3,434	34	61
Oconomowoc Lake Village	8,084	439	4	1,266	16	109
River Hills Village	6,537	355	5	1,293	20	98
Lac La Belle Village	6,008	327	6	1,134	19	102
Swallow Sch Dist	4,104	223	7	1,219	30	77
Pewaukee City	4,013	218	8	633	16	108
Delafield City	4,002	218	9	766	19	99
Mequon City	3,949	215	10	674	17	105

Stone Bank Sch Dist	3,671	200	11	1,186	32	68
Bayside Village	3,592	195	12	776	22	95
Eagle Village	3,553	193	13	506	14	110
Elm Grove Village	3,549	193	14	924	26	90
Whitefish Bay Village	3,213	175	15	559	17	104
Fox Point Village	3,204	174	16	798	25	92
Lake Country Sch Dist	3,166	172	17	1,127	36	57
Mequon-Theinsville Sch Dst	3,137	170	18	1,292	41	40
Elmbrook Sch Dist	3,030	165	19	1,264	42	38
Glendale City	3,027	165	20	982	32	64
Whitefish Bay Sch Dist	2,936	160	21	1,709	58	14
Butler Village	2,708	147	22	1,335	49	21
North Lake Sch Dist	2,697	147	23	813	30	75
Glendale River Hills Sch Dist	2,669	145	24	624	23	94
Nicolet Uhs Dist	2,655	144	25	570	21	96
Ozaukee County	2,624	143	26	274	10	113
Waukesha County	2,620	142	27	278	11	112
Nashotah Village	2,602	141	28	464	18	103
Oconomowoc Area Sch Dist	2,542	138	29	938	37	52
Pewaukee Sch Dist	2,504	136	30	1,072	43	33
Erin Sch Dist 2	2,475	135	31	697	28	83
Friess Lake Sch Dist	2,455	133	32	814	33	62
Hartland Village	2,440	133	33	710	29	79
Arrowhead Unif High Sch Dist	2,437	132	34	461	19	101
Kettle Moraine Sch Dist	2,431	132	35	1,053	43	30
New Berlin City	2,417	131	36	776	32	69
Shorewood Village	2,406	131	37	666	28	85
North Prairie Village	2,371	129	38	382	16	107
Menomonee Falls Village	2,352	128	39	1,017	43	32
Greendale Village	2,343	127	40	587	25	91
Mukwonago Village	2,328	127	41	754	32	66
Muskego City	2,311	126	42	562	24	93
Richfield J1 Dist	2,258	123	43	595	26	88
Hartland-Lakeside Jt Sd 3	2,257	123	44	730	32	67
Belgium Village	2,252	122	45	651	29	80
Lannon Village	2,250	122	46	981	44	28
Thienville Village	2,231	121	47	815	37	54
Pewaukee Village	2,226	121	48	655	29	78
Menomonee Falls Sch Dist	2,226	121	49	1,066	48	23
Big Bend Village	2,218	121	50	577	26	89
Franklin City	2,204	120	51	623	28	82
Washington County	2,198	119	52	419	19	100
Sussex Village	2,180	118	53	683	31	70
Germantown Sch Dist	2,170	118	54	893	41	41
Grafton Sch Dist	2,162	117	55	939	43	29

Wauwatosa Sch Dist	2,149	117	56	671	31	71
New Berlin Sch Dist 14	2,145	117	57	1,093	51	18
Shorewood Sch Dist	2,128	116	58	1,058	50	19
Wauwatosa City	2,077	113	59	737	36	58
Mukwonago Sch Dist	2,069	112	60	780	38	49
Merton Community Sch Dist	2,068	112	61	580	28	84
Oak Creek City	2,067	112	62	796	38	47
Greendale Sch Dist	2,066	112	63	1,069	52	17
Richmond Sch Dist	2,053	112	64	808	39	45
Oconomowoc City	2,022	110	65	1,634	81	7
Total Towns	2,001	109	66	134	7	114
Brown Deer Village	2,000	109	67	654	33	63
Slinger Sch Dist	1,946	106	68	784	40	44
Cedarburg Sch Dist	1,935	105	69	864	45	26
Fox Point J2	1,930	105	70	598	31	74
Waukesha Sch Dist	1,918	104	71	724	38	48
West Bend City	1,905	104	72	715	38	51
Hamilton Sch Dist	1,865	101	73	829	44	27
Oak Creek-Franklin Sch Dist	1,857	101	74	683	37	53
Wales Village	1,825	99	75	232	13	111
Muskego-Norway Sch Dist	1,825	99	76	775	42	34
Brown Deer Sch Dist	1,824	99	77	867	48	24
Hales Corners Village	1,816	99	78	490	27	87
Slinger Village	1,795	98	79	1,404	78	8
Whitnall Sch Dist	1,774	96	80	857	48	22
Franklin Sch Dist	1,771	96	81	953	54	15
Greenfield City	1,699	92	82	527	31	73
Fredonia Village	1,678	91	83	523	31	72
Kewaskum Sch Dist	1,675	91	84	604	36	55
Jackson Village	1,651	90	85	866	52	16
West Bend Joint Sch Dist 1	1,643	89	86	489	30	76
Port Washington-Saukville Sch Dist	1,618	88	87	700	43	31
Hartford Jt Sch Dist 1	1,607	87	88	433	27	86
Greenfield Sch Dist	1,592	87	89	572	36	56
Hartford U H Sch Dist	1,577	86	90	317	20	97
Cedarburg City	1,539	84	91	1,529	99	5
West Allis City	1,520	83	92	635	42	37
Dousman Village	1,510	82	93	621	41	42
Cudahy City	1,480	80	94	611	41	39
St Francis City	1,470	80	95	501	34	60
Newburg Village	1,456	79	96	416	29	81
Milwaukee County	1,427	78	97	462	32	65
West Milwaukee Village	1,406	76	98	1,012	72	10
West Allis Sch Dist	1,350	73	99	554	41	43

Grafton Village	1,321	72	100	656	50	20
Saukville Village	1,314	71	101	870	66	11
South Milwaukee City	1,299	71	102	505	39	46
Brookfield City	1,299	71	103	953	73	9
St Francis City Sch Dist 6	1,282	70	104	535	42	36
South Milwaukee Sch Dist	1,204	65	105	452	38	50
Cudahy Sch Dist	1,178	64	106	528	45	25
Milwaukee City	**1,081**	**59**	**107**	**659**	**61**	**12**
Kewaskum Village	1,054	57	108	443	42	35
Hartford City	1,019	55	109	2,008	197	2
Milwaukee City Sch Dist	926	50	110	316	34	59
Port Washington City	789	43	111	845	107	4
Waukesha City	749	41	112	707	94	6
Germantown Village	592	32	113	673	114	3
Norris Sch Dist	438	24	114	263	60	13
Northern Ozaukee Sch Dist	177	10	115	906	512	1
Summary Statistics						
Maximum	13,651	742		3,434	512	
Minimum	177	10		232	2	
Range	13,475	732		3,201	510	
Standard Deviation	1,918	104		422	50	
Mean	2,477	135		806	43	
Coefficient of Variation	0.77	0.77		0.52	1.16	
Correlation between Capacity & Effort Indices		-0.28				

Referenced Table

Table E-1
All Local Governments in Metropolitan Milwaukee, 2002

Counties	Municipalities	Towns*	Special Districts	School Districts
Milwaukee County	Bayside Village	Addison Town	Allenton Sanitary Dist	Arrowhead Unif High Sch Dist
Ozaukee County	Belgium Village	Barton Town	Ashippun Lake Protect & Rehab Dist	Brown Deer Sch Dist
Washington County	Big Bend Village	Belgium Town	Big Cedar Lake Protect & Rehab Dist	Cedarburg Sch Dist

Waukesha County	Brookfield City	Brookfield Town	Big Muskego Bass Bay Protect & Rehab Dist	Cudahy Sch Dist
	Brown Deer Village	Cedarburg Town	Blackhawk Area Sanitary Dist	Elmbrook Sch Dist
	Butler Village	Delafield Town	Brookfield Sanitary Dist	Erin Sch Dist 2
	Cedarburg City	Eagle Town	Delafield-Hartland Water Pollution Control Comm	Fox Point J2
	Chenequa Village	Erin Town	Druid Lake Dist	Franklin Sch Dist
	Cudahy City	Farmington Town	Eagle Spring Management Dist	Friess Lake Sch Dist
	Delafield City	Fredonia Town	Franklin Cmty Develop Auth	Germantown Sch Dist
	Dousman Village	Genesee Town	Glendale City Comty Dev Auth	Glendale River Hills Sch Dist
	Eagle Village	Germantown Town	Hartford Community Development	Grafton Sch Dist
	Elm Grove Village	Grafton Town	Hartford Millpond Lake Dist	Greendale Sch Dist
	Fox Point Village	Hartford Town	Hilldale Sanitary Dist	Greenfield Sch Dist
	Franklin City	Jackson Town	Jackson Community Dev Auth	Hamilton Sch Dist
	Fredonia Village	Kewaskum Town	Jackson-Germantown Drainage Dist	Hartford Jt Sch Dist 1
	Germantown Village	Lisbon Town	Lac La Belle Management Dist	Hartford U H Sch Dist
	Glendale City	Merton Town	Lake Pewaukee Sanitary Dist	Hartland-Lakeside Jt Sd 3
	Grafton Village	Mukwonago Town	Little Cedar Lake Protect & Rehab Dist	Kettle Moraine Sch Dist
	Greendale Village	Oconomowoc Town	Little Muskego Lake Protect Rehab Dist	Kewaskum Sch Dist
	Greenfield City	Ottawa Town	Mary Lane Sanitary Dist	Lake Country Sch Dist
	Hales Corners Village	Polk Town	Milwaukee Metro Sew Dist	Maple Dale-Indian Hill
	Hartford City	Port Washington Town	New Berlin Housing Auth	Menomonee Falls Sch Dist

	Hartland Village	Richfield Town	Oak Creek Community Dev Auth	Mequon-Theinsville Sch Dst
	Jackson Village	Saukville Town	Okauchee Lake Management Dist	Merton Community Sch Dist
	Kewaskum Village	Summit Town	Ozaukee Co Farm Drainage Bd	Milwaukee Area Voc-Tech-Adult Educ Dist*
	Lac La Belle Village	Trenton Town	Parkcrest Housing Bd	Milwaukee City Sch Dist
	Lannon Village	Vernon Town	Pewaukee Sanitary Dist	Mukwonago Sch Dist
	Menomonee Falls Village	Waukesha Town	Phanton Lake Management Dist	Muskego-Norway Sch Dist
	Mequon City	Wayne Town	Pike Lake Protection Dist	New Berlin Sch Dist 14
	Merton Village	West Bend Town	Pretty Lake Management Dist	Nicolet Uhs Dist
	Milwaukee City		Richfield Sanitary Dist	Norris Sch Dist
	Mukwonago Village		Scenic Drive Sanitary Dist	North Lake Sch Dist
	Muskego City		School Secton Lake Mgmt Dist	Northern Ozaukee Sch Dist
	Nashotah Village		Silver Lake Protect & Rehab Dist	Oak Creek-Franklin Sch Dist
	New Berlin City		Silver Lake Sanitary Dist	Oconomowoc Area Sch Dist
	Newburg Village		Slinger Village Hous Auth	Pewaukee Sch Dist
	North Prairie Village		South Milwaukee Housing Auth	Port Washington-Saukville Sch Dist
	Oak Creek City		Sussex Community Dev Auth	Richfield J1 Dist
	Oconomowoc City		Town Of Lisbon Sanitary Dist	Richmond Sch Dist
	Oconomowoc Lake Village		Town Of Merton Sanitary Dist	Shorewood Sch Dist
	Pewaukee City		Wallace Lake Sanitary Dist	Slinger Sch Dist
	Pewaukee Village		Waubeka Area Sanitary Dist	South Milwaukee Sch Dist
	Port Washington City		Waukesha City Housing Auth	St Francis City Sch Dist 6
	River Hills Village		Wauwatosa Housing Auth	Stone Bank Sch Dist

	Saukville Village		West Allis Community Dev Auth	Swallow Sch Dist
	Shorewood Village		West Bend Housing Auth	Waukesha Sch Dist
	Slinger Village		Wisconsin Center Dist	Waukesha Voc-Tech-Adult Educ Dist*
	South Milwaukee City			Wauwatosa Sch Dist
	St Francis City			West Allis Sch Dist
	Sussex Village			West Bend Joint Sch Dist 1
	Thienville Village			Whitefish Bay Sch Dist
	Wales Village			Whitnall Sch Dist
	Waukesha City			
	Wauwatosa City			
	West Allis City			
	West Bend City			
	West Milwaukee Village			
	Whitefish Bay Village			

* Indicates that the jurisdiction or category of jurisdictions was omitted from our analysis.

Appendix F – Richmond, Virginia

PURPOSE

The purpose of this section of the Appendix is to detail the application of the Representative Revenue System (RRS) to the case study of metropolitan Richmond, Virginia. In this section, we discuss the selection of local jurisdictions included in this case study, detail the revenues collected, document the base for each revenue that is collected, show how the revenues and their bases are used to generate estimates of revenue raising capacity and effort for this case study, and analyze revenue raising capacity and effort.

Jurisdiction Selection

The Richmond, Virginia, Metropolitan Area, includes sixteen counties and four independent cities: Amelia County, Caroline County, Charles City County, Chesterfield County, Cumberland County, Dinwiddie County, Goochland County, Hanover County, Henrico County, King and Queen County, King William County, Louisa County, New Kent County, Powhatan County, Prince George County, Sussex County, Colonial Heights City, Hopewell City, Petersburg City, and Richmond City. The state of Virginia has independent cities, which are defined by the U.S. Census Bureau as geographic entities not part of any surrounding county but are considered county equivalents for data presentation purposes.[59] Distinctly different from most other municipalities in their relationship to counties, these independent cities are governmentally independent of the counties surrounding them. In Virginia, the school districts are not independent entities, but are a division of county government. We grouped the independent cities by their adjacent county, adhering to the convention of the Bureau of Economic Analysis with the smaller independent cities in Virginia – Colonial Heights City, Hopewell City, and Petersburg City. Hopewell City was included under Prince George County, and Petersburg City and Colonial Heights City are under Dinwiddie County. We verified that the Richmond Metropolitan Area had sufficient 2000 population (1,096,957) to qualify as a case study.[60]

Unlike our case study of the Baltimore Metropolitan Area, we did not itemize special districts for our Richmond Metropolitan Area

Table F-1
Selected Local Governments in Metropolitan Richmond, Virginia, 2002

Counties	Municipalities	Special Districts
Amelia County		
Caroline County	Bowling Green Town	

	Port Royal Town	
Charles City County		
Chesterfield County		Crater Dist Area Agency On Aging
Cumberland County		
Dinwiddie County	McKenney Town	Appomattox River Soil & Water Conserv Dist
Goochland County		Monacan Soil & Water Conserv Dist
Hanover County	Ashland Town	Pamunkey Regional Jail Auth
		Pamunkey Regional Library
		Hanover Caroline Soil & Water Conserv Dist
Henrico County		Henricopolis Soil & Water Conserv Dist
		Capital Region Airport Comm
King and Queen County		Middle Peninsula Reg Jail Auth
King William County	West Point Town	Middle Peninsula Reg Airport
Louisa County	Louisa Town	Louisa Co Water Auth
	Mineral Town	Louisa Co Health Ctr Comm
New Kent County		Colonial Soil & Water Conserv Dist
		Heritage Library
Powhatan County		
Prince George County		Riverside Regional Jail Auth
		Crater Criminal Justice Academy

		James River Soil & Water Conserv Dist
Sussex County	Stoney Creek Town	
	Wakefield Town	
	Waverly Town	
Colonial Heights City		
Hopewell City		Appomattox Regional Library
Petersburg City		Petersburg City Hospital Auth
		South Central Wastewater Auth
		Appomattox River Water Auth
Richmond City		Richmond Hospital Auth
		Peumansend Creek Reg Jail Auth
		Central Virginia Waste Mgmt Auth
		Virginia Geographic Information Auth
		Richmond Eye & Ear Hospital Auth
		Richmond Metropolitan Auth

Table F-2 lists the local own-source revenues included in our study of revenue raising capacity and effort of local governments in metropolitan Richmond, Virginia. The state of Virginia permits local jurisdictions to levy all possible general categories of revenue-raising specified in the ACIR representative revenue-raising approach.

Table F-2
Local Government Revenue Sources Included in Metropolitan Richmond, Virginia

Sales Taxes	Other Taxes	Non-Tax Revenues
General Sales Taxes Total Selective Sales Taxes Public Utility Sales Other Selective Sales Taxes	Personal Income Taxes Property Taxes Real Personal	General User Charges Public Utilities Charges

Data Sources for Revenues Collected

Using 2002 Census of Governments data, we determined that county governments and the independent cities in the Richmond Metropolitan Area accounted for 88.90 percent of total local own-source revenues in the metropolitan area. In the Richmond Metropolitan Area, special districts collect 10.44 percent of total local own-source revenues while towns only contribute 0.66 percent, as show in Table F-3. We occasionally use estimation for those times when we could not locate town or special district data.

Table F-3
Percent of Local Own Source Revenue Collected by Jurisdiction Type, Metropolitan Richmond, 2002

	Counties and Independent Cities	Towns	School Districts	Special Districts
Percent total local own-source general revenue by government type in Richmond Metropolitan Area	88.90%	0.66%	Not Independent	10.44%

Handling Special Districts

The Richmond Metropolitan Area does not have readily obtainable population for special districts. Consequently, we estimated special district bases as we did in the other five metropolitan areas. The first step was to calculate the total amount of revenue collected for each revenue source. The next step was to calculate the total base collected for each base source for

counties plus independent cities. Then, we determined the special districts' proportional share of each counties' and independent cities' bases. We total each source of revenue source for the special districts, then divide by the total of all governments for that revenue source to give us a revenue ratio. Multiplying each by the appropriate county base provides a proportional estimate for the special district bases, and summing them provides an aggregated figure for use with the special districts category. The Baltimore metropolitan area was handled differently because we calculated results for each special district. Along with our less-sensitive aggregate approach to special districts in the Richmond metropolitan area, we also did not verify the compatibility of regional special district boundaries to our Richmond metropolitan area, as we did for the Baltimore case study. In some instances, it is possible that higher revenues are being attributed for special districts to the Richmond metropolitan area than are actually the case. We found, for example, that a region-wide special district in our Maryland study included a jurisdiction not in the Baltimore Metropolitan Area. Consequently, we readjusted the revenues from this Maryland authority, omitting revenues contributed by jurisdictions extant to our study boundaries.

Data Sources for Virginia Real and Personal Property Tax Revenue

The Census data do not provide a breakdown of property tax collections into real and personal property tax revenue. We were able to obtain the amount of revenues collected from real and personal property for counties and independent cities from Virginia for FY 2002, and we estimated this for the nine towns where it was unavailable.[61] These data collected at the state level did not equal the totals reported by the Census Bureau - this is probably a result of differences between the Census' and the state agencies' definitions of what categories are included under property taxes. The method we employed to apportion the Census data into real and personal property tax revenue was to use the state data to calculate the share of real and personal property revenue to total property tax collections for municipalities and counties and then to apply these percentages to the Census data. Because total property tax revenue also includes money earned from interest and penalties, this revenue was added to each jurisdiction's real property revenue tax total prior to these calculations.

Data Sources for Other Revenues

Data sources for other revenues for the Richmond Metropolitan Area came from the 2002 Census of Governments.

Data Sources for Tax Bases

In identifying appropriate representative tax bases or user charges bases, we have taken care to choose those bases that did not reflect local government policies. This insures a base that can be comparably interpreted across all jurisdictions. Where possible, we utilized the actual tax or user charges base, but in many instances, our acquisition of the actual tax or user charges base figures would have been inordinately labor intensive, and thus costly and time-consuming. We therefore obtained surrogate representative bases. This section outlines the economic bases selected, the data sources used, and any calculations made to estimate an appropriate tax or user charges base.

Property Tax Base

According to the state, properties are reassessed for tax billing purposes once every year and property owners are notified of any change in their assessment. In Virginia, real property assessments were obtained from annual reports issued by the State Department of Taxation.[62] In Virginia for FY2002, real property was assessed at fair market value (FMV) which is 100 percent of market value. The data for all ten towns were not in the State of Virginia Annual Report, Fiscal Year 2002, requiring us to use estimation.[63]

Real Property Base

The real property tax base is defined as the fair market value of all property in each jurisdiction, excepting property that is typically exempt from taxation (i.e. government property, churches, nonprofits). The representative base for real property in Virginia, upon which revenue collection is calculated, is the fair market value (FMV) of property at 100% of market value.

Personal Property Base

In Virginia, personal property taxes are local options; therefore, each local jurisdiction has discretion over what is subject to the personal property taxes. See Table F-4 for local government options.

In Virginia, personal property assessments were available through the same reports that provided real property assessments.[64] In Virginia, four categories are assessed: tangible personal property, machinery and tools, merchant's capital, and public service corporations. Virginia has a personal property tax on vehicles, and levies a tax on manufacturing equipment. Some jurisdictions levy a tax on farming equipment.

Table F-4

Personal Property Tax Local Options

Virginia
Furniture, Fixtures, Machinery and Equipment*
Leased Property
Other Tangible Personal Property*
Commercial & Manufacturing Inventory**
Supplies
Other Vehicles

Vehicles
Livestock/Agriculture

* In VA, other tangible personal property may include household personal property.

General Sales Tax Base

The representative tax base for the general sales tax is the aggregate value of taxable retail sales in 2002. It was available for counties, independent cities, and selected towns from the 2002 U.S. Economic Census.[65] The towns of Bowling Green, Louisa, Mineral, Port Royal, and Wakefield levy a sales tax, but they were among the towns for which the aggregate value of taxable retail sales was not available through the 2002 Economic Census. This slightly reduces their hypothetical revenues.

Selective Sales Taxes Base

Census defines Selective Sales Taxes as taxes imposed on the sale of particular commodities or services or on the gross receipts of particular businesses separately and apart from the General Sales tax. The U.S. Advisory Commission on Intergovernmental Relations included nine separate selective sales taxes in their calculations of Representative Revenue Systems for the 50 states. However, many of these selective sales taxes are state only revenue sources. For example, the ACIR includes in its measures selective sales taxes on motor fuel, insurance premiums and alcohol. Local governments typically do not have access to these revenue sources so we have excluded them from our estimates of local own-source revenue raising capacity. However, based on the experiences of local governments in this study area, we include selective sales taxes on public utilities, and other selective sales taxes.

Selective sales taxes on public utilities include taxes on transportation companies, telephones, telegraphs and light and power. The base of the tax is generally the gross receipts or gross earnings of the company providing the service. Sometimes the tax may be based on the number of units sold, e.g. kilowatt-hours of electricity. Obtaining the base from the pertinent companies is not feasible. In any case, however, the base of the tax reflects consumption decisions by individual consumers. As a result, we use aggregate personal income for 1999 as the representative base for selective sales taxes.

Aggregate personal income for 1999 was obtained for all local jurisdictions from the 2000 Census of Population.[66] The U.S. Bureau of Economic Analysis published estimated aggregated personal income for 2001 and for 2002, but they generate the figures for counties only. This necessitated use of the 2000 Census of Population, because figures were available for counties and municipalities. Use of the 2000 Census of Population aggregate income data results marginally skews our results, because we expect incomes to be higher in 2002. Consequently, our usage of the 2000 Census of Population data (again, which reports aggregate personal income for 1999) to generate revenue raising capacity levels introduces a bias into our hypothetical revenue raising capacity figures, making them marginally higher than they otherwise would be.

Other Selective Sales Taxes

According to the Census Bureau definitions, Other Selective Taxes include taxes on specific commodities, businesses, or services not reported separately under selective sales taxes. For example, this could include taxes on contractors, lodging, lubricating oil, fuels other than motor fuel, motor vehicles, meals, soft drinks, margarine, etc. Unfortunately, the Census data do not break down total revenues from other selective sales taxes into these component parts. As a result, we use aggregate personal income for 1999 as the representative base for other selective sales taxes. Aggregate personal income for 1999 was obtained for all jurisdictions from the 2000 Census of Population.[67] As noted earlier, this introduces a bias into our hypothetical revenue raising capacity figures, making them marginally higher than they otherwise would be.

Income Tax Base

We use Adjusted Gross Income (AGI) for taxable year 2002, covering the state fiscal year ending June 30, 2002, as the representative tax base for the income tax. AGI for Virginia was collected from state reports that made it available for counties and independent cities.[68] From the 2002 Census of Governments, we observed that Louisa Town levied an income tax, thus our inclusion of this revenue source. However no adjusted gross income figure was available on the cited state report for Louisa Town due to its small population size. This slightly deflates Louisa Town's hypothetical revenues.

User Charges Base

According to the Census Bureau definition, Current Charges reflect "Amounts received from the public for performance of specific services which benefit the person charged and from sale of commodities or services." Basically, Current Charges are user charges, which reflect the consumption decisions of individual citizens. Thus, revenue generated from user charges depends, in large part, on prices charged and the resulting consumption choices of individual citizens. For the purposes of this study, then, we use aggregate personal income for 1999[69] as the representative base for general user charges, recognizing the limitations covered above.

Public Utilities Base

For the purposes of this study, Public Utility charges include revenues from water, electric, gas, and transit utilities. In each case, there is a charge for the service being provided – essentially making these revenues comparable to user charges. As a result, we use aggregate personal income for 1999 as the representative base for user charges, remembering the concerns expressed in earlier sections.[70]

EMPIRICAL RESULTS

We generated revenue raising capacity and revenue raising effort for all jurisdictions and these are presented alphabetically below (Table F-5), followed by analysis.

Table F-5
Revenue Raising Capacity and Effort of
Local Governments in the Richmond Metropolitan Area, FY2002
By Rank on Revenue Raising Capacity

Local Jurisdictions	Revenue Raising Capacity			Revenue Raising Effort		
	Total Hypothetical Collections Per Capita	Index	Rank	Actual Collections Per Capita	Index	Rank
Amelia County	$1,308.31	78.51	13	$582.72	44.54	27
Ashland Town	$489.98	29.40	28	$320.74	65.46	21
Bowling Green Town	$606.46	36.39	23	$1,032.05	170.18	6
Caroline County	$1,349.97	81.01	11	$729.71	54.05	25
Charles City County	$1,420.91	85.27	10	$1,157.96	81.49	14
Chesterfield County	$1,748.92	104.96	6	$1,315.73	75.23	16
Colonial Heights City	$1,789.04	107.36	5	$1,881.34	105.16	10
Cumberland County	$1,180.31	70.83	18	$666.41	56.46	24
Dinwiddie County	$1,297.78	77.88	14	$860.80	66.33	20
Goochland County	$2,561.96	153.75	2	$1,734.03	67.68	19
Hanover County	$2,020.56	121.26	3	$1,439.48	71.24	17
Henrico County	$1,899.61	114.00	4	$1,499.82	78.95	15
Hopewell City	$1,219.77	73.20	16	$1,711.15	140.28	7
King And Queen County	$1,286.18	77.19	15	$1,093.82	85.04	13
King William County	$1,512.94	90.79	8	$926.14	61.21	23
Louisa County	$2,689.86	161.42	1	$1,126.27	41.87	29
Louisa Town	$514.21	30.86	26	$540.33	105.08	11
Mckenney Town	$548.70	32.93	25	$598.64	109.10	9
Mineral Town	$581.30	34.88	24	$1,139.15	195.97	5
New Kent County	$1,717.49	103.07	7	$915.99	53.33	26
Petersburg City	$1,071.28	64.29	20	$1,172.26	109.43	8
Port Royal Town	$512.74	30.77	27	$1,888.24	368.26	1
Powhatan County	$1,473.99	88.46	9	$623.05	42.27	28
Prince George County	$1,185.79	71.16	17	$732.96	61.81	22
Richmond City	$1,317.92	79.09	12	$3,055.37	231.83	2
Stoney Creek Town	$748.93	44.94	22	$212.87	28.42	30
Sussex County	$1,072.77	64.38	19	$749.36	69.85	18
Wakefield Town	$446.89	26.82	29	$997.11	223.12	3
Waverly Town	$441.42	26.49	30	$463.84	105.08	12
West Point Town	$862.24	51.74	21	$1,884.51	218.56	4

Summary Statistics						
Maximum	$2,689.86	161.42		$3,055.37	368.26	
Minimum	$441.42	26.49		$212.87	28.42	
Range	$2,248.43	134.93		$2,842.50	339.84	
Standard Deviation	$602.14	36.14		$597.60	75.24	
Mean	$1,229.27	73.77		$1,101.73	106.24	
Coefficient of variation	0.49	0.49		0.54	0.71	

Revenue Raising Effort

Examining the data in Table F-6 for revenue raising effort, we observe that the sixteen counties capture the lower positions, 16 of the last 19 to be exact. Also 40% of the jurisdictions had indexes above 100, all of them municipalities. This suggests that counties are underutilizing their available revenue sources in the metropolitan area compared to the other jurisdictions. They are able to extract all the wealth they wish to access with less effort than the towns in their region.

Revenue Raising Capacity

Examining the data in Table F-6, we discover that in the Richmond Metropolitan Area, revenue raising capacity indexes were higher in counties in the inner ring to the northern side of the City of Richmond. The top seven counties lie adjacent to Richmond or one another and are all on the northern side of the city. These include the Counties of Louisa, Goochland, Hanover, Henrico, Chesterfield, and New Kent. Colonial Heights City, an independent county-equivalent city, ranks within that grouping as well. They are also the only jurisdictions whose revenue raising capacity index was over the metropolitan average of 100. While the 16 counties are arrayed across the highest 19 positions, the ten towns that are not independent trailed at the bottom of the list of revenue raising capacity. Counties and independent cities in Virginia have more extensive tax and charges bases and wealthier ones.

Revenue Raising Effort Versus Revenue Raising Capacity

Eight towns and the four independent cities had actual collections per capita for FY2002 that exceeded their hypothetical collections. More revenue raising effort is necessary for these jurisdictions to meet their greater expenditure level.

Table F-6
Revenue Raising Capacity and Effort of
Local Governments in the Richmond Metropolitan Area, FY2002

	Revenue Raising Effort			Revenue Raising Capacity		
	Actual Collections Per Capita	**Index**	**Rank**	**Total Hypothetical Collections Per Capita**	**Index**	**Rank**
Virginia			-			-
Port Royal Town	$ 1,888.24	368.26	1	$ 512.74	30.77	27
Richmond City	$ 3,055.37	231.83	2	$ 1,317.92	79.09	12
Wakefield Town	$ 997.11	223.12	3	$ 446.89	26.82	29
West Point Town	$ 1,884.51	218.56	4	$ 862.24	51.74	21
Mineral Town	$ 1,139.15	195.97	5	$ 581.30	34.88	24
Bowling Green Town	$ 1,032.05	170.18	6	$ 606.46	36.39	23
Hopewell City	$ 1,711.15	147.79	7	$ 1,219.77	73.20	16
Petersburg City	$ 1,172.26	109.43	8	$ 1,071.28	64.29	20
Mckenney Town	$ 1,139.15	109.10	9	$ 548.70	32.93	25
Colonial Heights City	$ 1,881.34	105.16	10	$ 1,789.04	107.36	5
Louisa Town	$ 540.33	105.08	11	$ 514.21	30.86	26
Waverly Town	$ 463.84	105.08	12	$ 441.42	26.49	30
King And Queen County	$ 1,093.82	85.04	13	$ 1,286.18	77.19	15
Charles City County	$ 1,157.96	81.49	14	$ 1,420.91	85.27	10
Henrico County	$ 1,499.82	78.95	15	$ 1,899.61	114.00	4
Chesterfield County	$ 1,315.73	75.23	16	$ 1,748.92	104.96	6
Hanover County	$ 1,439.48	71.24	17	$ 2,020.56	121.26	3
Sussex County	$ 749.36	69.85	18	$ 1,072.77	64.38	19
Goochland County	$ 1,734.03	67.68	19	$ 2,561.96	153.75	2
Dinwiddie County	$ 860.80	66.33	20	$ 1,297.78	77.88	14
Ashland Town	$ 320.74	65.46	21	$ 489.98	29.40	28
Prince George County	$ 732.96	61.81	22	$ 1,185.79	71.16	17
King William County	$ 926.14	61.21	23	$ 1,512.94	90.79	8
Cumberland County	$ 666.41	56.46	24	$ 1,180.31	70.83	18
Caroline County	$ 729.71	54.05	25	$ 1,349.97	81.01	11
New Kent County	$ 915.99	53.33	26	$ 1,717.49	103.07	7
Amelia County	$ 582.72	44.54	27	$ 1,308.31	78.51	13
Powhatan County	$ 623.05	42.25	28	$ 1,473.99	88.46	9
Louisa County	$ 1,126.27	41.87	29	$ 2,689.86	161.42	1
Stoney Creek Town	$ 212.87	28.42	30	$ 748.93	44.94	22
	$ 1,666.34	1.00				

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Appendix G – San Francisco, California

PURPOSE

The purpose of this section of the Appendix is to detail the application of the Representative Revenue System (RRS) to the case study of San Francisco, California. We describe the process used to select the jurisdictions, revenues and tax bases included in our analysis. We then show how the revenues and tax bases are used to generate the estimates of revenue capacity and effort for this case study.

Jurisdiction Selection

When selecting the jurisdictions to include in our analysis, we started with the U.S. Census Bureau's definition of the San Francisco-San Mateo-Redwood City, CA Metropolitan Division, which includes Marin County, San Francisco city/county, San Mateo County and all of the encompassed municipalities, special districts and school districts appearing in the 2002 Census of Governments. Table G-1 contains a complete listing of all of the San Francisco area local governmental units included in the Census of Governments data. However, because of data constraints, time limitations and issues regarding the relevance to our study, we modified the Census of Governments' jurisdictional definitions.

First, individual special districts in the San Francisco-San Mateo-Redwood City Metropolitan Division were not included as individual units in our analysis. Special district revenues accounted for roughly 9% of total own source revenues in the San Francisco region, however data on special district boundaries and tax bases were unavailable to us. Therefore, instead of analyzing individual special districts' revenue capacities, we included special districts' revenues in county revenue total. For example, Marin County, CA independently generated property tax revenues of $105,231,000, while special districts in Marin County independently generated $38,604,000 in property tax revenues. In order to reflect the revenue-raising capabilities of special districts in our analysis, we included the special districts' property tax revenues in the county total. In our final analysis, it therefore appeared that Marin County had $143,835,000 in property tax revenues. This was done for each revenue item in each county.

Table G-1
All Local Governments in the San Francisco Metropolitan Area, 2002

Counties	Municipalities	Special Districts	School Districts
Marin	Atherton	Almonte Sanitary District	Bayshore Elem Sch Dist
San Francisco City/County	Belmont	Alto Sanitary Dist	Belmont-Redwood Shores Elementary School Dist
San Mateo	Belvedere	Bay Area Air Quality Management District	Bolinas Stinson Un School Dist
	Brisbane	Bayshore Sanitary District	Brisbane Elem Sch Dist
	Burlingame	Bel Marin Keys Community Services Dist	Burlingame Elem Sch Dist
	Colma	Belmont Co Water District	Cabrillo Unified School District
	Corte Madera	Belvedere Tiburon Jt Recreation Comm	Dixie Elem Sch Dist
	Daly City	Belvedere-Tiburon Library Agency	Hillsborough City School Dist
	East Palo Alto	Bolinas Cmty Public Util Dist	Jefferson Elem Sch Dist
	Fairfax	Bolinas Fire Protection District	Jefferson Union High School District
	Foster City	Broadmoor Police Protec Dist	Kentfield Elem Sch Dist
	Half Moon Bay	Central Marin Sanitation Ag	La Honda Pescadero Unified School District
	Hillsborough	Coastside Co Water District	Laguna Jt Elem Sch Dist
	Larkspur	Colma Fire Protection District	Laguna Salada Elementary School District
	Menlo Park	Criminal Justice Council Of San Mateo County	Lagunitas Elem Sch Dist
	Mill Valley	East Palo Alto Sanitary Dist	Larkspur School District
	Millbrae	Fire House Community Park Agency	Las Lomitas Elementary School District
	Novato	Golden Gate Bridge Hwy Transportation Dist	Lincoln Elem Sch Dist
	Pacifica	Granada Sanitary District	Marin Cmty College Dist*
	Portola Valley	Half Moon Bay Fire Protec Dist	Menlo Park Cy Elementary School District
	Redwood	Hetch-Hetchy Water District	Mill Valley Elem Sch Dist
	Ross	Highlands Recreation Community Services District	Millbrae Elementary School District
	San Anselmo	Homestead Valley Sanitary District	Nicasio Elem Sch Dist
	San Bruno	Inverness Public Utility District	Novato Unif Sch Dist

	San Carlos	Kentfield Fire Protection Dist	Portola Val Elementary School District
	San Mateo	Ladera Recreation District	Ravenswood City Elementary School District
	San Rafael	Las Gallinas Valley Sanitary Dist	Redwood City Elementary School District
	Sausalito	Los Trancos Co Water Dist	Reed Union Elem School Dist
	South San Francisco	Marin Cities Liability Mgt Auth	Ross Elem Sch Dist
	Tiburon	Marin City Community Service District	Ross Valley School District
	Woodside	Marin Co Housing Authority	San Bruno Park Elementary School District
		Marin Co Risk Management Auth	San Carlos Elementary School District
		Marin Co Transit District	San Francisco Community College District*
		Marin Co-Corte Madera Public Library Authority	San Francisco Unif Sch Dist
		Marin County Hazardous And Solid Waste Joint Powers Authority	San Mateo Co Community College District*
		Marin County Major Crimes Task Force	San Mateo High School District
		Marin County Resources Conservation Dist	San Mateo-Foster City School District
		Marin County Sanitary Dist 5	San Rafael City Schools
		Marin County Sanitary District 1	Sausalito Elem School Dist
		Marin County Sanitary District 2	Sequoia Union High School District
		Marin County-Stinson Beach Emergency Ambulance Authority	Shoreline Unified Sch Dist
		Marin Hospital District	South San Francisco Unified Sch Dist
		Marin Municipal Water Dist	Tamalpais Union High School Dist
		Marin Schools Insurance Auth	Union Jt Elem Sch Dist
		Marin Sonoma Mosquito And Vector Control Dist	Woodside Elem School District
		Marin Street Light Acquisition Joint Powers Authority	
		Marin Telecommunications Agency	
		Marinet Consortium Joint Powers Authority	

		Marinwood Community Service District	
		Menlo Park Fire Protection District	
		Mid-Coastside Sewer Authority	
		Montara Sanitary District	
		Muir Beach Community Service District	
		Net Six Joint Powers Authority	
		North Coast Co Water Dist	
		North Marin County Water Dist	
		Northwestern Pacific Railroad Authority	
		Novato Fire Protection District	
		Novato Sanitary District	
		Pacifica Youth Service Bureau	
		Peninsula Corridor Jt Powers Bd	
		Peninsula Hosp Dist	
		Peninsula Library System Dist	
		Point Montara Fire Protection District	
		Program Beta Risk Mgt Authority	
		Redwood City Public Facilities And Infrastructure Authority	
		Richardson Bay Regional Agency	
		Richardson Bay Sanitary District	
		Ross Valley Fire Service	
		Ross Valley Paramedic Authority	
		San Carlos Senior Citizens Center Authority	
		San Francisco City And Co Joint Powers Financing Auth	
		San Francisco Co Transportation Terminal Authority	
		San Francisco County And City Housing Authority	
		San Mateo Co Harbor Dist	
		San Mateo Co Housing Authority	
		San Mateo Co Mosquito Abatement District	
		San Mateo Co Narcotics Task Force	
		San Mateo Co Resource Cons Dist	
		San Mateo Co Sch Insur Group	
		San Mateo Co Transit Dist	
		San Mateo County-Cities Insurance Group	

		Sausalito Marin City Sanitary Dist	
		Sequoia Healthcare District	
		Sewage Agency Southern Marin	
		Skyline County Water District	
		Sleepy Hollow Fire Protec Dist	
		South Bayside System Auth	
		South County Fire Protection Auth	
		South San Francisco Capital Improvement Finance Authority	
		South San Francisco City Housing Auth	
		South San Francisco Public Facilities Corporation	
		Southern Marin Emergency Medic Paramedic System	
		Southern Marin Fire Protection District	
		Stinson Beach County Water District	
		Stinson Beach Fire Protec Dist	
		Strawberry Park Recreation Dist	
		Tamalpais Cmty Serv Dist	
		Tiburon Fire Protec District	
		Tomales Community Services District	
		Twin Cities Police Authority	
		West Bay Sanitary District	
		Westborough Co Water Dist	
		Woodside Fire Pro District	

Next, we eliminated three county-based community college districts from our analysis. Although counties generate some revenue for community colleges, financing community colleges is primarily a responsibility of the state, and we therefore excluded all community college districts from our study.

Finally, there are 42 local school districts in the San Francisco region, which we condensed and analyzed at the county level. We did this because the geographic boundaries of the local school districts are not always coterminous with the boundaries of municipalities, making it difficult, if not impossible, to estimate the tax bases of local districts. All of the local school districts are, however, contained within larger, county-based school systems. Subsequently, it was possible to aggregate school districts' finances and analyze their revenue-raising capacities at the county level. For example, there are 15 local school districts that comprise the Marin county school system. We aggregated the 15 local districts' revenues and analyzed the revenue-raising capacity of the Marin County schools in the aggregate. We used the same process for schools in San Mateo County. The San Francisco City/County has only one school district, so it was unnecessary to make any adjustments.

Data Sources for Revenues Collected

In order to use revenue collection data that are comparable across all local jurisdictions, we used revenue data from the U.S. Census Bureau 2002 Census of Governments. However, not all revenue sources included in the Census of Governments Finance data were included in our study. For a detailed explanation of the excluded revenue sources, please refer to Exhibit A in Appendix A.

Table G-2 lists the local own-source revenues that were included in our study for local governments in metropolitan San Francisco, California.

Table G-2
Local Government Revenue Sources,
Included in the San Francisco, California Metropolitan Division

Other Taxes	Sales Taxes	Non-Tax Revenues
Property Taxes	General Sales Taxes	User Charges
Real	Selective Sales Taxes	Public Utilities
Personal	Public Utilities	
Payroll Tax	Other Selective Sales	

The proportion of local own source revenues collected by each type of jurisdiction is listed in Table G-3. Using 2002 Census of Government data, we determined that the three county governments in the San Francisco metropolitan area accounted for 10.0% of the total local own-source revenues in the metropolitan area. Municipalities accounted for 61.7% of total local own-source revenues, school districts accounted for 19% and non-educational special districts accounted for 9%.

Table G-3
Percent of Local Own Source Revenue Collected by Jurisdiction Type,
Metropolitan San Francisco, 2002

San Francisco Metropolitan Area	COUNTY	Municipalities	School Districts	Special Districts (Non Educational)
Percent of total local own-source general revenue	10.0%	61.7%	19.3%	9%

Apportioning Property Tax Revenue

The Census data do not provide a breakdown of property tax collections into real and personal property tax revenue. In addition, the San Francisco area counties and municipalities could not provide a breakdown of real and personal property tax revenues collected because they do not report data in this manner. Therefore, we had to estimate the proportion of property tax revenues coming from real and personal property taxes. In order to do so, we applied the 2001-2002 property tax rates from each county to their respective real and personal property tax bases to get the hypothetical real and personal property tax collections. We then added together the hypothetical real and hypothetical personal property tax revenues to get the total hypothetical property tax revenues. We then divided the hypothetical real property tax revenues and the hypothetical personal property tax revenues by the total hypothetical property taxes to get the percent distribution of real and personal property taxes. We then applied these percentages to the Census of Governments property tax revenue figure to get the estimated real and personal property tax revenues. For an example of these calculations, please refer to Table G-4.

In the San Francisco City/County, the 2001-2002 property tax was composed of the following taxes:[71]

San Francisco City/County:	1.0237516%
Special Districts:[72]	.0084119%
San Francisco Unified School District:	.07739351%

The same rates were used for Marin County because we were unable to attain a breakdown of real and personal property tax rates.

In San Mateo County, all property is taxed at a rate of 1%.[73]

Table G-4
Estimation of Real and Personal Property Tax Revenues
San Francisco City/County

Region	Real Property Base	Personal Property Base	Tax Rate	Hypothetical Real Collections (Real Property Base * Tax Rate)	Hypothetical Personal Collections (Personal Property Base * Tax Rate)	Total Hypothetical Collections (Hypothetical Real + Hypothetical Personal)	Percent Real (Hypothetical Real/Total Hypothetical)	Percent Personal (Hypothetical Personal/ Total Hypothetical)	COG Property Tax Revenue	Estimated Real (Percent Real * COG Revenue)	Estimated Personal (Percent Personal * COG Revenue)
San Francisco City/ County	84,478,196,397	3,980,517,692	0.010236	864,694,827	40,743,449	905,438,275	0.955001407	0.044998593	761,024,000	726,779,000	34,245,000

* Indicates that jurisdiction or category of jurisdictions was omitted from our analysis.
** School districts were consolidated to three county-level districts (Marin County Schools, San Francisco City/County Schools and San Mateo County Schools).

Data Sources for Tax Bases

This section outlines the economic tax bases that we selected, the data sources used, and any calculations made to estimate an appropriate base for each source of local revenues.

Property Tax Base

For counties in the San Francisco Metropolitan Statistical Area, property tax base assessments were obtained from the California State Board of Equalization 2000-2001 Annual Report Statistical Appendix Tables. The 2000-2001 report was used because assessed property values that are reported as of the January 2000 lien date are used to compute tax rates for the 2001-2002 fiscal year. Property tax base data for San Francisco area municipalities were obtained via e-mail request from the California State Board of Equalization.

Real Property Base

The real property tax base is defined as the market value of all property in each jurisdiction, except property that is typically exempt from taxation (i.e. government property, churches, and nonprofit organizations). Homeowners' exemptions were added back into the real property value. All other exemptions were not added back into the real property value. The representative base for real property in California is the net assessed value of property at 100% of market value.

Personal Property Base

In California, personal property taxes include any tangible, moveable property that is not designated as real property. Examples of personal property include aircraft, boats, factory equipment, computers and other office equipment, and improvements on the real estate of others.[74]

General Sales Tax

California counties are authorized to levy a discretionary sales surtax on most transactions subject to state sales and use taxes. The sales tax is imposed on the total retail price of tangible personal property, and every retailer is subject to the sales tax. In all counties except for San Francisco, the tax can be in .25% increments up to 2.0%. San Francisco has a special cap of 2.50%. In San Francisco, 1.25% of their sales tax goes to the city/county government and 1.25% goes to special districts. Total taxable sales data were obtained from the California State Board of Equalization.[75]

Selective Sales Taxes

The U.S. Census Bureau defines Selective Sales Taxes as taxes imposed on the sale of particular commodities or services or on the gross receipts of particular businesses separately and apart from the General Sales tax. The Advisory Commission on Intergovernmental Relations included nine separate selective sales taxes in their calculations of Representative Revenue Systems for the 50 states. However, many of these selective sales taxes are state only revenue sources. For

example, the ACIR includes in its measures selective sales taxes on motor fuel, insurance premiums and alcohol. Local governments typically do not have access to these revenue sources so we have excluded them from our estimates of local own-source revenue raising capacity. However, based on the experiences of local governments in our study area, we do include selective sales taxes on public utilities, and other selective sales taxes.

Selective sales taxes on public utilities include taxes on transportation companies, telephones, telegraphs and light and power. The base of the tax is generally the gross receipts or gross earnings of the company providing the service. Sometimes the tax may be based on the number of units sold, e.g. kilowatt-hours of electricity. In either case, however, the base of the tax reflects consumption decisions by individual consumers. As a result, we use personal income for 2000 as the representative base for these selective sales taxes. Personal income for all local jurisdictions was obtained from the 2000 Census of Population.

Other Selective Sales Taxes

According to the Census Bureau definitions, Other Selective Taxes include taxes on specific commodities, businesses, or services not reported separately under selective sales taxes. For example, this would include taxes on contractors, lodging, lubricating oil, fuels other than motor fuel, motor vehicles, meals, soft drinks, margarine, etc. In San Francisco, a large component of the Other Selective Sales Tax category comes from the Hotel Room Tax (or "transient occupancy tax"). The Hotel Room Tax is a 14 percent tax levied on hotel room charges. Hotel operators collect the tax from their guests.[76] The Hotel Room Tax is an important source of revenue for the city/county of San Francisco. In 2002, almost 6% of San Francisco's General Fund revenues came from the hotel room tax.

Unfortunately, the Census of Governments does not break total other selective sales tax revenues down into its component parts, making it impossible to tell how much revenue is received from the Hotel Room Tax itself. Therefore, because we had to use total other selective sales taxes as our unit of analysis, we chose to use personal income for 2000 as the representative base for other selective sales taxes. Personal income for all local jurisdictions was obtained from the 2000 Census of Population.

Payroll Tax Base

The Payroll Tax is a 1.5% tax on the total payroll expenses of persons and associations engaging in business in San Francisco. All businesses that engage, hire, employ, or contract with one or more employees to perform work or render services within San Francisco are required to pay the tax. Businesses with annual payroll of less than $166,667 qualify as small business enterprises and are exempt from the payroll tax. [77]
The base of the payroll tax is total payroll expenses less small business exemptions and other exemptions. The Economic Census, which is conducted every five years, reports total payroll expenses at the city, county, metropolitan area and state level. However, at the time of this study, the 2002 Economic Census data on total payroll expenses for all industries in the San Francisco region were only available at the county level.[78] We therefore used 1997 city-level Economic Census data to estimate the total proportion of county-level payroll in 2002 that was

generated by each city in Marin and San Mateo Counties. (Because San Francisco is a consolidated city/county government, 2002 payroll data were available from the Economic Census, and it was not necessary to make any estimations). Table G-5 contains an example of the calculations made to estimate city-level payroll in San Mateo County, CA.[79] [80] [81]

Table G-5
Estimation of 2002 City Payroll
San Mateo County, California

Geographic Area	1997 Total County Payroll	1997 Percent Of Total	2002 Total County Payroll	Estimated 2002 Payroll
San Mateo County	7,123,528,000		7,504,706,000	
Atherton	8,524,000	0.12%		9,005,647
Belmont	154,580,558	2.17%		162,852,120
Brisbane	168,115,261	2.36%		177,111,062
Burlingame	638,268,109	8.96%		672,421,658
Colma	Not Reported			
Daly City	185,924,081	2.61%		195,872,827
East Palo Alto	64,824,105	0.91%		68,292,825
Foster City	579,855,179	8.14%		610,883,068
Half Moon Bay	34,192,934	0.48%		36,022,589
Hillsboro	12,109,998	0.17%		12,758,000
Menlo Park	951,703,341	13.36%		1,002,628,722
Millbrae	82,632,925	1.16%		87,054,590
Pacifica	35,617,640	0.50%		37,523,530
Portola Valley	13,534,703	0.19%		14,258,941
Redwood	866,933,358	12.17%		913,322,720
San Bruno	184,499,375	2.59%		194,371,885
San Carlos	390,369,334	5.48%		411,257,889
San Mateo	1,064,255,083	14.94%		1,121,203,076
South San Francisco	1,579,286,158	22.17%		1,663,793,320
Woodside	19,233,526	0.27%		20,262,706
Unincorporated Area (including Colma)	89,044,100	1.25%		93,808,825

User Charges Base

According to the Census Bureau definition, Current Charges reflect "Amounts received from the public for performance of specific services which benefit the person charged and from sale of commodities or services." Basically, Current Charges are user charges, which reflect the consumption decisions of individual citizens. Thus, revenue generated from user charges depends, in large part, on prices charged and the resulting consumption choices of individual citizens. For the purposes of this study, then, we use personal income for 2000 as the representative base for user charges. Personal income for all local jurisdictions was obtained from the 2000 Census of Population.

Public Utilities Base

For the purposes of this study, Public Utility revenues include revenues from water utilities and transit authorities. In each case, there is a charge for the service being provided – essentially making these revenues comparable to user charges. As a result, we use personal income for 2000 as the representative base for user charges. Personal income for all local jurisdictions was obtained from the 2002 Census of Population.

Revenue Capacity and Effort Calculations

After the data on revenue collections and the representative, standard revenue bases are collected, there are basically five calculations made in order to determine the revenue capacity and effort indices. These calculations are detailed below using San Francisco's real property tax revenue as an example.

<u>Average Tax Rate – 2002</u>

The first step, after data collection, is to calculate the average tax rate for each revenue base by dividing the total collections of all local jurisdictions by the total base for that revenue source.

1) Real Property Tax Revenue All Local Governments		Real Property Tax Base All Local Governments		Avg. Real Property Tax Rate
2,037,744,699	/	202,451,818,702	=	1.01 %

<u>Hypothetical Yield or Revenue Capacity</u>

The potential, or hypothetical, revenue that a local government can generate is calculated by applying the average tax rate for each revenue source to the appropriate standard, representative base.

2) San Francisco's Real Prop. Tax Base		Avg. Real Prop. Tax Rate		Hypothetical Real Prop. Revenue
84,478,196,397	X	1.01%	=	850,301,064

Per Capita Hypothetical Yield, or Revenue Capacity

The hypothetical revenue is then divided by the local government's population to arrive at the per capita hypothetical revenue capacity.

3) Hypothetical Real Prop. Revenue		San Francisco's Population		Hypothetical Revenue Per Capita
850,301,064	/	776,733	=	$ 1094.71

Revenue Capacity Index

The revenue capacity index is determined by dividing the local government's hypothetical real property tax revenues per capita by the total per capita real property tax collections for all local governments and multiplying by 100.

4) San Francisco's Hypothetical Real Prop. Revenue per Capita		Total Local Govt. Real Prop. Collections Per Capita		San Francisco's Revenue Capacity Index
($1094.71	/	$ 1177.08) x 100	=	93.02

Revenue Effort Index

The revenue effort index is calculated by dividing each local government's actual collections per capita by its hypothetical yield, or revenue capacity, per capita and then multiplying by 100. Below San Francisco's revenue effort index is calculated for its real property revenues.

5) San Francisco City/County's Per Capita Actual Collections from Real Property Taxes		San Francisco City/County's Per Capita Hypothetical Collections from Real Property Taxes		Revenue Effort Index
($961.57	/	$ 1094.72) x 100	=	82.44

EMPIRICAL RESULTS

Table G-6 contains the results of our revenue capacity and revenue effort calculations for the San Francisco Metropolitan Area. As the table depicts, the City/County of San Francisco ranks 24th out of the 37 jurisdictions in the Metropolitan Area in revenue capacity and ranks 3rd in the region in revenue effort. This indicates that despite (or perhaps because of) the city's relatively low revenue capacity the City/County of San Francisco's taxes are higher than the regional average.

There are significant disparities in the revenue capacity and effort between jurisdictions in the San Francisco Metropolitan Area. Revenue capacity indices range from 328 to 30. The standard deviation for revenue capacity indices is 76, and the coefficient of variation is .58. Revenue effort indices in the region have a smaller range than the effort indices, as the high is 273 and the

low is 7. However, the effort indices themselves vary more than the capacity indices, as their coefficient of variation is 1.13.

The correlation between capacity and effort indices in the San Francisco Metropolitan Area was –0.29, indicating a slight inverse relationship between capacity and effort. It makes intuitive sense that there would be a negative relationship between capacity and effort as jurisdictions with low revenue capacity would need to have higher relative tax efforts in order to raise regionally comparable revenues.

Table G-6
Revenue Raising Capacity and Effort of
Local Governments in the San Francisco Metropolitan Area, FY2002

Local Jurisdictions	Revenue Raising Capacity			Revenue Raising Effort		
	Total Hypothetical Collections Per Capita	Index	Rank	Actual Collections Per Capita	Index	Rank
Metropolitan San Francisco	2,578	100		2,578	100	
Atherton Town	8,456	328	1	663	8	36
Belvedere City	7,833	304	2	1,378	18	31
Woodside Town	7,076	275	3	464	7	37
Hillsborough Town	6,961	270	4	1,552	22	27
Portola Valley Town	6,628	257	5	675	10	35
Tiburon Town	5,562	216	6	573	10	34
Sausalito City	5,185	201	7	2,103	41	14
Brisbane City	5,135	199	8	3,654	71	6
Ross Town	5,094	198	9	1,468	29	22
Menlo Park City	4,269	166	10	1,224	29	23
Mill Valley City	3,875	150	11	1,130	29	20
Larkspur City	3,383	131	12	707	21	28
Burlingame City	3,328	129	13	1,684	51	8
Colma Town	3,315	129	14	6,893	208	2
Corte Madera Town	3,300	128	15	1,466	44	13
San Carlos City	3,248	126	16	910	28	24
Marin County	2,809	109	17	519	18	29
San Mateo County	2,777	108	18	337	12	32
Redwood City	2,608	101	19	1,215	47	11
Belmont City	2,594	101	20	952	37	16
San Anselmo Town	2,506	97	21	2,166	86	5
San Mateo City	2,487	96	22	861	35	17
San Rafael City	2,478	96	23	437	18	30
San Francisco City and County	**2,429**	**94**	**24**	**2,748**	**113**	**3**

South San Francisco City	2,414	94	25	1,089	45	12
Half Moon Bay City	2,392	93	26	809	34	18
Novato City	2,269	88	27	247	11	33
Millbrae City	2,122	82	28	1,040	49	9
Fairfax Town	2,046	79	29	487	24	26
Marin County Schools	1,963	76	30	492	25	25
San Bruno City	1,735	67	31	646	37	15
San Mateo County Schools	1,725	67	32	4,719	273	1
Pacifica City	1,673	65	33	516	31	19
Foster City	1,625	63	34	1,505	93	4
Daly City	1,217	47	35	625	51	7
San Francisco Unif Sch Dist	1,166	45	36	338	29	21
East Palo Alto City	767	30	37	373	49	10
Summary Statistics						
Maximum	8,456	328		6,893	273	
Minimum	767	30		247	7	
Range	7,689	298		6,647	267	
Standard Deviation	1,967	76		1,328	53	
Mean	3,418	133		1,315	47	
Coefficient of Variation	0.58	0.58		1.01	1.13	
Correlation Between Capacity & Effort Indices		-0.29				

Endnotes

[1] Pat Atkins received the 2000 Census of Population figure for the Jones Falls Watershed Association from Christel Cothran, the Executive Director, on June 6, 2005. The larger Gwynns Falls Watershed Association was estimated from that figure. The population figures were approximations because the zip codes that generate the tabulations extend beyond the watershed boundaries.

[2] The 2002 Census of Governments lists two watershed associations in the Baltimore Metropolitan Area with revenue collections for property tax. As this research went to conclusion, state contacts with the Department of Natural Resources and the Department of Assessment and Taxation have no codes in their files nor any information on watershed associations being taxing districts. This information was provided to Pat Atkins by Kenneth Shanks, Department of Natural Resources, on June 6, 2005. Christel Cothran, the Executive Director of the Jones Falls Watershed Association confirmed to Pat Atkins on June 6, 2005 that her association receives no revenue from property taxes, but suggested that the county might do so to support watershed projects. Pat Atkins has queried the Census Bureau, but has yet to receive a response. Until verification by the Census Bureau regarding the interpretation of the Census data, the research team will not change the data files.

[3] Jurisdictions within the Northeast Maryland Waste Disposal Authority in both 2000 and FY2002 included a jurisdiction not in the Baltimore Metropolitan Area. Funds from that county, Montgomery County, comprised $353,414 of the Authority's $982,095 budget. Katherine Coble, Director of Finance and Administration for the Authority, provided the data to Pat Atkins on June 3, 2005 from her personal financial worksheets. Because our research only used own source revenue data and only the Baltimore Metropolitan Area, we needed to reapportioned the Montgomery County jurisdiction share of the $927,000 own source revenues total and then subtract that deflated total from the Authority budget. This deflated Montgomery County total equaled $333,588, and we rounded to $334,000, then subtracted from the $927,000 census figure to obtain the Baltimore Metropolitan Area revenue portion of the Northeast Maryland Waste Disposal own source revenues, or $593,000.

[4] Maryland Department of Legislative Services, GASB 34 Form, for Fiscal Year Ending June 30, 2002, Part I. On February 10, 2005, Laura Kittel explained to Pat Atkins that the railroad operating real property assessable base figures are not released by the state for four of our municipalities, Aberdeen, Havre de Grace, Union Bridge, and Westminster other than noting they are each under $250,000. She was unsure as to whether the individual towns could retrieve these data. Our research schedule did not permit us the opportunity to determine the data's availability so we estimated the values. Additionally, the Templeton file was not accessed when Pat Atkins retrieved GASB 34 figures from Maryland Department of Legislative Services records, and Queen Anne Town was omitted because there is no 2002 Census of Governments data. Karen Benton of the Maryland Department of Legislative Services on January 4, 2005 provided Templeton's revenues by e-mail, but not the needed assessments, so the data were estimated. Thus assessment calculations have been estimated for these five jurisdictions that have Census of Governments data. Real property and personal

property assessed values were estimated by using the ratio derived from the set of municipal and county jurisdictions that have these data. The percentage applied to derive the real property assessment estimate for these six jurisdictions is 92.99% and to derive the personal property assessment estimate is 7.01%. Data were also tested based on the set of only municipalities that had these data which generated a Real Property percentage to Total Property percentage of 92.06%. This did not change the rank order revenue raising capacity of any jurisdictions. Havre de Grace and Aberdeen had a one digit increase in their Index. Additionally, we estimated the real and personal property tax assessments of the two special districts that collected property tax revenues through the following calculation. We began with the property tax revenue total that was listed in the 2002 Census of Governments for Gwynns Falls Watershed Association and Jones Falls Watershed Association, and multiplied them by a thousand to obtain the actual dollar amount. We then applied the census-calculated average percentage of real property tax revenue (84.6%) and the census-calculated average percentage of personal property for the region (15.4%) to create estimates for the real and personal property tax breakdowns. We then divided these real and personal property tax revenue figures by the property tax rate for Baltimore County for 2002 (.01115) to achieve estimated real and personal property assessable base figures. We used the Baltimore County figure because more than half of each Association lies in Baltimore County. The population figures were approximations because the zip codes that generate the tabulations extend beyond the watershed boundaries.

[5] Pat Atkins obtained a worksheet from Laura Kittel, State of Maryland, Department of Assessments and Taxation, February 10, 2005. Laura Kittel derived the railroad real property operating revenues through applying each county's rate to each counties' railroad operating real property assessable base figure as listed on Table 1, County Assessable Base, www.dat.state.md.us/sdatweb/stats/MARbe2002.xls5. Table 1 also shows total property tax revenue. For our research we took our total property tax figure from the Uniform Financial Report for fiscal year ending June 30, 2002, GASB 34 Form, filed with the Department of Legislative Services. Note also that there was an error in the total assessable base in Part XV, column (a) for Baltimore City. The total should be 20,848,729,831 not the figure that is shown. This was verified by Pat Atkins with Karen Benton of the Maryland Department of Legislative Services via e-mail on January 4, 2005. In only 6 out of 27 instances did the total property value assessable base differ on the two sources [Table 1 and GASB 34] by more than 1%. These were Annapolis City, 56.57%; Baltimore City, 8.72%; Howard County, 1.66%; Queen Anne's County, 4.02%; Sykesville Town, 14.14%; Queen Anne Town, 60%; and Queenstown, 16.61%. Of these, only Baltimore City and Howard County had railroad operating real property assessable bases. Consequently, the railroad operating real property revenues calculated from the assessable base for these two jurisdictions through use of Table 1 were inflated by their respective percents in order to synchronize them with our GASB 34 source. We also asked for the railroad operating real property revenue for ten jurisdictions, six of which had none. For the four that did, Laura Kittel noted then that the railroad operating real property assessable base figures from which revenue estimates can be derived are not publicly disclosed by the state for the four, Aberdeen, Havre de Grace, Union Bridge, and Westminster other than that they are each less than $250,000. She was unsure as to whether the individual towns could retrieve these data. Our research schedule did not permit us the

opportunity to determine the data's availability from the four above-mentioned towns, so we estimated. The municipal real property and personal property bases for these five were estimated by using the ratio of the assessable real to personal property base derived from the set of municipal and county jurisdictions that have this data. The percentage applied to derive the real property estimate for these four was 92.99%. The real property ratio that results from the average of the 14 towns and cities that do have this breakdown available is 92.06%. We decided to use the broader-based municipal and county ratio of 92.99%.

[6] Pat Atkins, personal conversation with John Borders, Director, Queen Anne's County Office of Budget and Finance, February 8, 2005.

[7] See Table 1A, County Assessable Base for the tax year beginning July 1, 2001, Subject to Real Property Tax Rate and to Personal Property Tax Rate at www.dat.state.md.us/sdatweb/stats/m02be1a.html; Table 1, County Assessable Base for the tax year beginning July 1, 2001 (revised March 27, 2002), www.dat.state.md.us/sdatweb/stats/MARbe2002.xls; Muncipalities/Special Districts Section, Table 1 in State of Maryland, Department of Legislative Services, Local Government Finances in Maryland, Fiscal Year Ending June 30, 2002, July 2003; and also from the Department of Legislative Services, GASB forms, Fiscal Year Ending June 30, 2002.

[8] These were Annapolis, Baltimore City, Queenstown, and Sykesville.

[9] For Table, see Maryland State Department of Assessment and Taxation (SDAT), www.dat.state.md.us/sdatweb/stats/m02be1a.html, Table 1A, County Assessable Base for the tax year beginning July 1, 2001, Subject to Real Property Tax Rate and to Personal Property Tax Rate. The SDAT provides other real property assessment reports at selected periods throughout the year; therefore, the values differ slightly due to the time of year assessments were done.

[10] Maryland Department of Legislative Services, GASB 34 Form, for Fiscal Year Ending June 30, 2002, Part XV. Note that there was an error in the total assessable base in Part XV, column (a) for Baltimore City. The total should be 20,848,729,831 not the figure that is shown.

[11] Pat Atkins obtained a worksheet from Laura Kittel, State of Maryland, Department of Assessments and Taxation, February 10, 2005. Laura Kittel derived the revenues through applying each county's tax rate to each county's railroad operating real property assessable base figure as listed on Table 1, County Assessable [Property Tax] Base, www.dat.state.md.us/sdatweb/stats/MARbe2002.xls5. That table also shows total property tax revenue.

[12] We estimated the real and personal property tax assessments of the two special districts that collected property tax revenues through the following calculation. We began with the property tax revenue total that was listed in the 2002 Census of Governments for Gwynns Falls Watershed Association and Jones Falls Watershed Association, and multiplied them by a thousand to obtain the actual dollar amount. We then applied the census-calculated average

percentage of real property tax revenue (84.6%) and the census-calculated average percentage of personal property for the region (15.4%) to create estimates for the real and personal property tax breakdowns. We then divided these real and personal property tax revenue figures by the property tax rate for Baltimore County for 2002 (.01115) to achieve estimated real and personal property assessable base figures. We used the Baltimore County figure because more than half of each Association geographically lies in Baltimore County. The population figures were approximations because the zip codes that generate the tabulations extend beyond the watershed boundaries.

[13] Pat Atkins obtained from Ed Muth, State of Maryland, Department of Assessments and Taxation, "Certification Data File Location Summary as of Sep 30, 2004", where 2001 figures correspond to fiscal year beginning July 1, 2001.

[14] For Table, see Maryland State Department of Assessment and Taxation (SDAT), www.dat.state.md.us/sdatweb/stats/m02be1a.html, Table 1A, County Assessable Base for the tax year beginning July 1, 2001, Subject to Real Property Tax Rate and to Personal Property Tax Rate. The SDAT provides other real property assessment reports at selected periods throughout the year; therefore, the values differ slightly due to the time of year assessments were done.

[15] Maryland Department of Legislative Services, GASB 34 Form, for Fiscal Year Ending June 30, 2002, Part XV. Note also that there was an error in the total assessable base in Part XV, column (a) for Baltimore City. The total should be 20,848,729,831 not the figure that is shown.

[16] For Table, see Maryland State Department of Assessment and Taxation (SDAT), www.dat.state.md.us/sdatweb/stats/m02be1a.html.

[17] Maryland Department of Legislative Services, GASB 34 Form, for Fiscal Year Ending June 30, 2002, Part XV. Note also that there was an error in the total assessable base in Part XV, column (a) for Baltimore City. The total should be 20,848,729,831 not the figure that is shown.

[18] Each counties' railroad operating real property assessable base figure is listed on Table 1, County Assessable [Property Tax] Base, www.dat.state.md.us/sdatweb/stats/MARbe2002.xls5, as well as being available through GASB34. Pat Atkins took these county railroad real property values, and subtracted them from the total RPU property assessment values, the remainder being the personal property assessment value. Real and personal property of utilities is subject only to the personal property tax, as is business is subject only to personal property tax rate, so the utilities and business figures presented in the Table are solely personal property assessment figures. Municipal real property assessments were obtained as covered in footnote 5.

[19] U.S. Bureau of the Census, 2000 Census of Population, American FactFinder, Table P83. Aggregate income in 1999 (dollars) for the population 15 years and over, found at www.census.gov.

[20] U.S. Bureau of the Census, 2000 Census of Population, American FactFinder, Table P83. Aggregate income in 1999 (dollars) for the population 15 years and over, found at www.census.gov.

[21] For MD, See the Comptroller of Maryland Revenue Administration, *Income Tax Summary Report,* Tax Year 2001, covering the state fiscal year ending June 30, 2002, p.8. Report also found at http://www.marylandtaxes.com/publications/fiscalrprts/summary00.pdf.

[22] U.S. Bureau of the Census, 2000 Census of Population, American FactFinder, Table P83. Aggregate income in 1999 (dollars) for the population 15 years and over, found at www.census.gov.

[23] U.S. Bureau of the Census, 2000 Census of Population, American FactFinder, Table P83. Aggregate income in 1999 (dollars) for the population 15 years and over, found at www.census.gov.

[24] U.S. Census of Governments Home Page; Subjects Index "M", Metropolitan and Micropolitan Statistical Areas; Ranking Tables for Population of Metropolitan Statistical Areas, Micropolitan Statistical Areas, Combined Statistical Areas, New England City and Town Areas, and Combined New England City and Town Areas: 1990 and 2000 (Areas defined by the Office of Management and Budget as of June 6, 2003.) (PHC-T-29); Table 2a. Population in Metropolitan and Micropolitan Statistical Areas and Their Geographic Components in Alphabetical Order and Numerical and Percent Change for the United States and Puerto Rico: 1990 and 2000

[25] Data obtained from Robert Kelley, Manager of Technical Support, Clark County Assessors Office, from the *2001-2002 October Segregation Report*, October 31, 2001, Column A - Supplemental Real on Unsecured; and from the *2002-2003 October Segregation Report*, October 31, 2002, Column A - Supplemental Real on Unsecured. Letter to Pat Atkins dated December 3, 2004. In a telephone conversation with Pat Atkins on December 2, 2004, Robert Kelley explained the need for the two years. Real property taxes are billed in advance of the fiscal year and then supplemental bills are sent several times throughout the year. Personal property tax bills are billed at the end of the fiscal year. To utilize comparable data, real property revenues that appear in the October 31, 2001 segregation report align to personal property revenues in the October 31, 2002 segregation report.

[26] Robert Kelley explained in a telephone conversation with Pat Atkins on December 2, 2004 that the Nevada Segregation Reports contain a column that shows revenue of redevelopment incremental growth that has been excluded from the taxing district totals. In a subsequent email dated August 26, 2005, he referenced another column to be included that shows central assessments' unitary redevelopment incremental growth figure that also has been excluded from the taxing district totals. To obtain a complete revenue total, these excluded figures need to be added in. For the Las Vegas Metropolitan Area jurisdictions in our report, the tax revenue generated from the excluded redevelopment incremental growth totaled $553,310,342 and the unitary-generated revenue totaled $21,463,743. Together, these two excluded

revenues comprise about 3.9% of what would be a more inclusive total revenue figure ($14,587,770,255). However, because we needed to know the real and personal property revenue data for these excluded redevelopment growth totals, and they were not available, we did not incorporate these columns into our calculations. Thus property tax revenues are slightly undervalued for those entities that this affected, including Clark County; Clark County School District; the cities of Boulder, Henderson, Las Vegas, Mesquite, and North Las Vegas; and the special districts of Boulder City Library, Henderson District Public Libraries, Las Vegas-Clark County Library District, and Virgin Valley Water District.

[27] Figure obtained from U.S. Census Bureau website by selecting People, then Estimates, then Archived or Archives, then 2000s, then Vintage 2002, then County, then 2000 to 2002 Annual Population Estimates by County, then Nevada, to reach the table entitled Nevada County Population Estimates: April 1, 2000 to July 1, 2002, at http://www.census.gov/popest/archives/2000s/vintage_2002/CO-EST2002-01/CO-EST2002-01-32.html

[28] This is according to an email from Doug Bixby to Pat Atkins on August 26, 2005. He informs us that in Nevada in FY2002, land was assessed at full cash market value. Vacant land was valued at its highest and best use. Improved land was valued at its actual use, using Marhall & Swift replacement cost, new less statutory depreciation of 1.5% per year with a 25% residual.

[29] Clark County Assessor, "About the Assessor's Office."

[30] State of Nevada, Department of Taxation, Division of Assessment Standards, *2001-2002 Statistical Analysis of the Roll, August 2002*, p. 28. Also data file compiled by Doug Bixby, Nevada Department of Taxation, for this research. He compiled it from the *2001-2002 Statistical Analysis of the Roll, August 2002*, closing June 30, 2001 for the secured roll and closing April 30, 2002 for the unsecured roll; and from the *2001-2002 October Segregation Report*, October 31, 2001. Received by Pat Atkins via e-mail on Tuesday, December 7, 2004. Doug Bixby explains that the 2001-2002 statistical analysis of the tax roll [a listing of secured and unsecured property] in theory should contain the closing assessment figures for FY2001-2002. However he notes that, because the roll for secured property closed on June 30, 2001, while for unsecured property the closure was April 20, 2002, then the State Board could have adjusted some valuations for central assessments on appeal after the roll closed, thus meaning those values would fail to be included in the record for that year. Secured property is property on which the taxes are a lien against the real estate, such as building improvements and land. Unsecured property is taxable property that does not attach to the real estate, such as business equipment and fixtures, mobile/manufactured homes, and airplanes. Definitions are from the Clark County Assessor, "Glossary," available on their website, www.accessclarkcounty.com.

[31] We calculate the percentage share of the locality's assessment to the total assessment for the county and then apply that percentage to the total county local property exemption to determine each locality's estimated exempted local property value. We then subtract that estimated exempted local value from the local property assessment to derive a dollar value for the local property assessment after exemptions. According to the Clark County Assessor

Glossary available on the website, "Nevada tax law (NRS) exempts all property owned by federal, state and local governments from taxation. This includes property for schools, parks, libraries, government buildings, roads, airports, military installations and other charitable organizations."

[32] Nevada permits the levy of a tax on the net production of minerals in lieu of a property tax relative to the extraction of minerals within the state. Mining companies can deduct from their gross proceeds those expenses directly tied to the production of the product. From Nevada Department of Taxation, Division of Assessment Standards, Local government Finance Section, *Fiscal Year 2001-2002 Property Tax Rates for Nevada Local Governments*, Glossary.

[33] State of Nevada, Department of Taxation, Division of Assessment Standards, *2001-2002 Statistical Analysis of the Roll, August 2002*, p. 28. Also data file compiled by Doug Bixby, Nevada Department of Taxation, for this research. He compiled it from the *2001-2002 Statistical Analysis of the Roll, August 2002*, closing June 30, 2001 for the secured roll and closing April 30, 2002 for the unsecured roll; and from the *2001-2002 October Segregation Report*, October 31, 2001. Received by Pat Atkins via e-mail on Tuesday, December 7, 2004. Doug Bixby notes in this same email, "In Nevada, we assign central assessments unitary (total enterprise) values and then apportion those based on system mileage in each taxing entity. That makes it impossible to separate values for land, improvements or personal property. Also, the Department [of Taxation] does not value land owned by centrally assessed taxpayers." The total assessed value of all real and personal property in Clark County was $44,390,401,133, of which centrally-assessed real and personal property was 2.8% ($1,255,315,270) of this total.

[34] Email from Robert Kelley explained in a telephone conversation with Pat Atkins on December 2, 2004 that the Nevada Segregation Reports contain a column that shows revenue of redevelopment incremental growth that has been excluded from the taxing district totals. Doug Bixby, in a subsequent email dated August 26, 2005, he referenced another column from this report to be included that shows central assessments' unitary redevelopment incremental growth figure that also has been excluded from the taxing district totals.

[35] Robert Kelley explained in a telephone conversation with Pat Atkins on December 2, 2004 that the Nevada Segregation Reports contain a column that shows revenue of redevelopment incremental growth that has been excluded from the taxing district totals. Doug Bixby, in a subsequent email dated August 26, 2005, referenced another column to be included that shows central assessments' unitary redevelopment incremental growth figure that also has been excluded from the taxing district totals. He further noted that it needs to counted as part of the total assessed value for a jurisdiction which is the process we followed.

[36] State of Nevada, Department of Taxation, Division of Assessment Standards, *2001-2002 Statistical Analysis of the Roll, August 2002*, p. 28. Also data file compiled by Doug Bixby, Nevada Department of Taxation, for this research. He compiled it from the *2001-2002 Statistical Analysis of the Roll, August 2002*, closing June 30, 2001 for the secured roll and

closing April 30, 2002 for the unsecured roll; and from the *2001-2002 October Segregation Report*, October 31, 2001. Received by Pat Atkins via e-mail on Tuesday, December 7, 2004.

[37] Nevada Department of Taxation, Division of Assessment Standards, Local government Finance Section, *Fiscal Year 2001-2002 Property Tax Rates for Nevada Local Governments*, Glossary.

[38] Clark County Assessor, "Business Personal Property," available on their website, www.accessclarkcounty.com.

[39] Clark County Assessor, "Business Personal Property," available on their website, www.accessclarkcounty.com.

[40] Clark County Assessor, "Manufactured Homes," available on their website, www.accessclarkcounty.com.

[41] Clark County Assessor, "Conversion of Manufactured Home to Real Property," available on their website, www.accessclarkcounty.com.

[42] Personal e-mail communication to Pat Atkins from the Clark County Manager of Technical Support for the Office of the Assessor, Robert Kelley noted of the Census, November 7, 2005.

[43] State of Nevada, Department of Taxation, Division of Assessment Standards, *2001-2002 Statistical Analysis of the Roll, August 2002*, p. 28. Also data file compiled by Doug Bixby, Nevada Department of Taxation, for this research. He compiled it from the *2001-2002 Statistical Analysis of the Roll, August 2002*, closing June 30, 2001 for the secured roll and closing April 30, 2002 for the unsecured roll; and from the *2001-2002 October Segregation Report*, October 31, 2001. Received by Pat Atkins via e-mail on Tuesday, December 7, 2004. Also data obtained from Robert Kelley, Manager of Technical Support, Clark County Assessors Office, figures as of June 26, 2001. Contained in letter to Pat Atkins dated December 3, 2004.

[44] U.S. Bureau of the Census, 2002 Economic Census, American FactFinder, Sector 44: Retail Trade: Geographic Area Series: Summary Statistics: 2002, Release date: 6/29/2005.

[45] U.S. Bureau of the Census, 2000 Census of Population, American FactFinder, Table P83. Aggregate income in 1999 (dollars) for the population 15 years and over, found at www.census.gov.

[46] U.S. Bureau of the Census, 2000 Census of Population, American FactFinder, Table P83. Aggregate income in 1999 (dollars) for the population 15 years and over, found at www.census.gov.

[47] U.S. Bureau of the Census, 2000 Census of Population, American FactFinder, Table P83. Aggregate income in 1999 (dollars) for the population 15 years and over, found at www.census.gov.

[48] U.S. Bureau of the Census, 2000 Census of Population, American FactFinder, Table P83. Aggregate income in 1999 (dollars) for the population 15 years and over, found at www.census.gov.

[49] Source: State of Florida, Department of Revenue (2002). "Florida Property Valuations & Tax Data."

[50] Source: State of Florida, Department of Revenue (2002). "Florida Property Valuations & Tax Data."

[51] The Florida Legislative Committee on Intergovernmental Relations reported Dade County's 2002 total taxable sales as being $29,080,660,299. The 2002 Economic Census reported total retail sales for Dade County at $24,568,286, which is roughly $4.5 billion less than the state's figure. However, because total taxable sales data are unavailable at the municipal level from the State of Florida, we elected to use the Economic Census' 2002 retail sales data as the base for the General Sales Tax for all jurisdictions. It is therefore likely that the base of the General Sales Tax is underestimated in some jurisdictions, as it is likely that they employ the tax on other bases in addition to retail sales.

Sources:

United States Census Bureau. 2002 Economic Census. Retail Trade: Geographic Area Series: Summary Statistics. http://www.census.gov/econ/census02/index.html

Florida Legislative Committee on Intergovernmental Relations. (2005). "Taxable Sales by County, State Fiscal Years Ending June 30, 1990 – 2004." http://fcn.state.fl.us/lcir/data/ststxret.xls

[52] Retail sales data were not available for the following jurisdictions: Biscayne Park Village, El Portal, Golden Beach, Indian Creek, Islandia, Medley, North Bay Village and Virginia Gardens. The Economic Census indicated that this was because either (1) there were no retail sales in the jurisdiction, or (2) the data were withheld to avoid disclosing sales data for individual companies. Sales data that were not reported at the jurisdictional level for confidentiality reasons are included in the Dade County total.

[53] Indian Creek Village is omitted from Table D-4 because it has an outlying fiscal capacity index of 7,195. Indian Creek Village, is a small, wealthy community with a population of 33 people and a per capita personal income of $141,545, which is $73,537 higher than the next-highest per capita income in Bal Harbor Village. Because of the unique circumstance present in Indian Creek, we decided to omit the jurisdiction from our final analysis despite the fact that it has independent taxation powers and did raise own source revenues in 2002.

[54] Information was obtained via personal request from Paul Ziegler, Wisconsin Department of Revenue.

[55] Information was obtained via personal request from Paul Ziegler, Wisconsin Department of Revenue.

[56] Northern Ozaukee school district

[57] Source: Wisconsin Department of Revenue. Division of Research and Policy (2002). "State and Local Sales and Use Tax Report 2001." http://www.dor.state.wi.us/ra/salusetx.pdf

[58] Source: Wisconsin Department of Revenue, Division of Research and Policy. (2001). Wisconsin School District Statistics for 2001. Summary by School District. http://www.dor.state.wi.us/ra/schdis03.html

[59] U.S. Census Bureau, *Census 2000 Housing Units*, Geography Notes. Retrieved 9/3/03 from http://quickfacts.census.gov/hunits/notes.html.

[60] U.S. Census of Governments Home Page; Subjects Index "M", Metropolitan and Micropolitan Statistical Areas; Ranking Tables for Population of Metropolitan Statistical Areas, Micropolitan Statistical Areas, Combined Statistical Areas, New England City and Town Areas, and Combined New England City and Town Areas: 1990 and 2000 (Areas defined by the Office of Management and Budget as of June 6, 2003.) (PHC-T-29); Table 2a. Population in Metropolitan and Micropolitan Statistical Areas and Their Geographic Components in Alphabetical Order and Numerical and Percent Change for the United States and Puerto Rico: 1990 and 2000.

[61] The data for the nine smaller towns were not in State of Virginia, Virginia Department of Taxation, *Annual Report FY 2002 (Revised May 29, 2003)*, Table 5.4: Tangible Personal Property, Machinery and Tools, Merchants' Capital, and Public Service Corporations – Tax Year 2001, pp.46-49, www.tax.virginia.gov/Web_PDFs/AnnualReportFY2002.pdf, and our request to the state regarding the possible availability of real and personal property revenues for the towns was not heeded. Real property and personal property revenues were estimated for the nine towns by using the ratio derived from the set of independent cities, county, and one town that have these data. The percentage applied to derive the real and personal property revenues are, respectively, 72.95% and 27.05%

[62] State of Virginia, Virginia Department of Taxation, *Annual Report FY 2002 (Revised May 29, 2003)*, Table 5.2: Real Estate Fair Market Value (FMV), Fair Market Value (Taxable), and Local Levy by Locality – Tax Year 2001, pp. 38-41, www.tax.virginia.gov/Web_PDFs/AnnualReportFY2002.pdf

[63] The data for all ten towns were not in State of Virginia, Virginia Department of Taxation, *Annual Report FY 2002 (Revised May 29, 2000)*, Table 5.2: Real Estate Fair Market Value (FMV), Fair Market Value Taxable (Taxable), and Local Levy by Locality - Tax Year 2001

and our request to the state regarding the possible availability of real and personal property assessment values for the towns was not heeded. Personal and real property values were estimated for towns by using the ratio derived from the set of independent cities and the counties. The percentage applied to derive the real and personal property assessments are, respectively, 79.25% and 20.75%.

[64] State of Virginia, Virginia Department of Taxation, *Annual Report FY 2002 (Revised May 29, 2003)*, Table 5.4: Tangible Personal Property, Machinery and Tools, Merchants' Capital, and Public Service Corporations – Tax Year 2001, pp.46-49, www.tax.virginia.gov/Web_PDFs/AnnualReportFY2002.pdf

[65] U.S. Bureau of the Census, 2002 Economic Census, American FactFinder, Sector 44: Retail Trade: Geographic Area Series: Summary Statistics: 2002, Release date: 6/29/2005. The towns of Bowling Green, Louisa, Mineral, Port Royal, and Wakefield levy a general sales tax, but data were not available for them, though the data were for the other small town with a general sales tax, West Point. McKenney, Stoney Creek, and Waverly have no general sales tax, nor does Ashland Town, the largest of the ten.

[66] U.S. Bureau of the Census, 2000 Census of Population, American FactFinder, Table P83. Aggregate income in 1999 (dollars) for the population 15 years and over, found at www.census.gov.

[67] U.S. Bureau of the Census, 2000 Census of Population, American FactFinder, Table P83. Aggregate income in 1999 (dollars) for the population 15 years and over, found at www.census.gov.

[68] See Virginia Department of Taxation, *Annual Report Fiscal Year 2004*, Richmond, Va., Table 1.5, Virginia Adjusted Gross Income by Locality and by Income Level, Taxable Year 2002, pp. 7-11, www.tax.virginia.gov/Web_PDFs/AnnualReportFY2004.pdf

[69] U.S. Bureau of the Census, 2000 Census of Population, American FactFinder, Table P83. Aggregate income in 1999 (dollars) for the population 15 years and over, found at www.census.gov.

[70] U.S. Bureau of the Census, 2000 Census of Population, American FactFinder, Table P83. Aggregate income in 1999 (dollars) for the population 15 years and over, found at www.census.gov.

[71] Source: San Francisco Assessor-Recorder's Office, Ad Valorem Real and Personal Property Tax Rates, http://www.sfgov.org/site/assessor_index.asp?id=92. The total property tax rate in the San Francisco City/County is 1.5%. The San Francisco Community College District levies property taxes at a rate of .01444422%. However, we did not include the Community College District in our analysis.

[72] The special districts tax rate is comprised of the are Bay Area Pollution Air Quality District (.00208539%) and the Bay Area Rapid Transit (.00632528%). Because we condensed the special districts for our study, we used a combined tax rate of .0084119%.

[73] Cities, school districts and special districts do not have the option to levy property taxes in San Mateo County. Rather, the county taxes all property at a rate of 1% and revenues received from property taxes are redistributed to local governments in the following manner: 64% goes to schools, 14% goes to the county, 12% goes to cities and 10% goes to special districts. However, the 2002 Census of Governments treats property taxes as own source revenue in their data set, and we therefore treated it in the same manner. Source: Personal correspondence with Vijay Sing at the San Mateo County Controller's Office, 8/12/05.

[74] City and County of San Francisco, Controller's Office, "Property Tax," http://www.ci.sf.ca.us/site/uploadedfiles/controller/budget_information/taxrev/Prop_0405.pdf

[75] Source: California State Board of Equalization, http://www.boe.ca.gov/news/tsalescont01.htm and http://www.boe.ca.gov/news/tsalescont02.htm

[76] City and County of San Francisco, Controller's Office, "Hotel Tax," http://www.ci.sf.ca.us/site/uploadedfiles/controller/budget_information/taxrev/Hotel_0504.pdf

[77] City and County of San Francisco, Controller's Office, "Payroll Tax," http://www.ci.sf.ca.us/site/uploadedfiles/controller/budget_information/taxrev/Payroll_0405.pdf

[78] 2002 Economic Census data for all California industries will not be completely available until September, 2005. Source: U.S. Census Bureau, 2002 Economic Census, http://www.census.gov/econ/census02/guide/geosumm.htm

[79] Columns may not add due to rounding.

[80] In San Mateo County, total payroll for the city of Colma was included in the total payroll for Unincorporated Areas in the county, and in Marin County total payroll for Belvedere and Ross was reported with the Unincorporated Areas. It was impossible to disaggregate these cities from the unincorporated areas and, subsequently, in our analysis it appears that Colma, Belvedere and Ross have a 2002 payroll of zero dollars. As a result, the revenue capacity indices for these cities are lower than they actually are.

[81] It was impossible to exclude small business' payroll from the Economic Census data. Therefore, because small businesses (defined as those with annual payrolls of less than $166,667) are exempted from the payroll tax, indices of revenue capacity will be slightly higher than it might otherwise be.