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# FISCAL IMPACT ANALYSIS OF FIVE GROWTH SCENARIOS

**DRAFT**

Prepared for

Knox County, Tennessee

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November 9, 1999

Prepared by:

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November 8, 1999

Ms. Kathy Hamilton, Finance Director  
Knox County Government  
Room 630  
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400 Main Avenue  
Knoxville, TN 37902

Dear Kathy:

TA is pleased to present the *Fiscal Impact of Five Growth Scenarios* Report. This report evaluates the fiscal impact to the County of providing existing levels of service to five different growth scenarios. These scenarios assume the current jurisdictional boundaries remain the same throughout the 22-year analysis period. The evaluations were performed using TA's FISCALS software designed exclusively for this assignment. The following are major observations from the analysis:

- The five scenarios generate near-term average *annual net deficits* to the General Fund, ranging from \$490,000 to \$1.49 million. Over the 22-year analysis period, only the Higher Retail and Higher Multifamily scenarios generate *net revenues*. However, these net revenues are *less than 1%* of the FY99 General Fund Budget, and should be considered, within the margin of error, as fiscally neutral. The Current Trends scenario generates average *annual net deficits* of \$1.35 million in 2010 and \$960,000 in 2020.
- In addition, there are deficits incurred in other Funds over the 22-year analysis period. Under the Current Trends scenario, the average annual net *deficit* for all Funds is over \$16.3 million. This is illustrated in the table below.

**Average Annual Results From New Growth  
Current Trends Scenario**

Fund	1999 to 2010	1999 to 2020
General Fund	(\$1.35)	(\$0.96)
General Purpose School Fund	(\$5.36)	(\$8.60)
School Construction Fund	\$3.80	\$7.57
General Debt Fund	(\$12.16)	(\$12.86)
Recreation Construction Fund	(\$0.25)	(\$0.45)
Solid Waste Fund	\$0.13	\$0.23
Library Fund	(\$1.02)	(\$0.91)
Highway Fund	(\$0.18)	(\$0.34)
<b>Total</b>	<b>(\$16.38)</b>	<b>(\$16.34)</b>

Fiscal Impact Analysis

Capital Facility Analysis

Impact Fee Systems

Growth Policy Planning

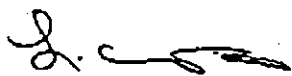
Economic and Market Analysis

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- Based on the analysis, the County is not in a position to provide current levels of service to new development under the present revenue structure without finding new revenue sources or raising existing rates. Otherwise, the existing development base will have to subsidize new growth, or existing levels of service will have to be decreased.

We look forward to presenting the findings. Please let us know if you have any questions.

Sincerely,



L. Carson Bise, II, AICP

Fiscal Impact of Five Growth ScenariosKnox County, Tennessee

The analysis illustrates the importance of Local Option Sales Tax to the County's current revenue structure. This is particularly true with the General Purpose School, School Construction and Highway Funds. Given the fact this revenue source is distributed based on point-of-sale, it is clearly in the County's best interest to have new retail uses locate within the unincorporated County versus the City of Knoxville.

Although not surprising, the analysis also shows that if the County is to encourage the current residential development pattern in the future, it clearly benefits fiscally from attracting additional economic development (i.e. nonresidential square footage). The primary reasons are increased Local Option Sales Tax (retail space) and Property Tax (all nonresidential space).

Because of the lower per unit costs associated with lower household sizes and other characteristics, the County also benefits fiscally by encouraging higher density, multifamily housing.

It is important to acknowledge that fiscal issues are only one concern. Environmental, land use, housing affordability, jobs/housing balance, and traffic issues must also be taken into consideration when making any final decisions on what is best for Knox County.

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## **I. EXECUTIVE SUMMARY**

### **A. Background**

Knox County, Tennessee has contracted with Tischler & Associates, Inc. (TA) to evaluate the fiscal impact of five different growth scenarios to the County between 1999 and 2020. A fiscal impact analysis determines whether revenues generated by new growth are enough to cover the resulting costs for service and facility demands placed on the County. As is further discussed below, revenues are insufficient to cover costs.

As a first step, TA prepared the "Level of Service, Cost and Revenue Assumptions" (LOS) document, which discusses County services and facilities anticipated to be impacted by new development. Since the methodology focuses on the case study-marginal cost approach, some operating expenses are semi-variable or fixed and the capital costs will be affected by the facility capacity and staging of development. Also, it is assumed all current County levels of service will remain the same during the forecast period.

The level of service assumptions have been utilized in combination with the various land use scenarios below to calculate the fiscal impact to Knox County's budget for the 22-year period between 1999 and 2020. Calculations were performed using TA's FISCALS software designed exclusively for this assignment.

### **B. Scenarios**

TA evaluated five different land use scenarios for their fiscal impact on the County's operating and capital budgets. These scenarios were developed in conjunction with County staff and are based on existing conditions in Knox County, as well as recent and projected trends.

Each of the five scenarios has unique characteristic, thereby allowing the County to understand the fiscal impacts, as well as implications, of various development-related variables over time. An obvious development scenario is the base case, or current pace of growth continuing. Therefore, a *Current Trends* scenario was developed using the Knoxville-Knox County Metropolitan Planning Commission's Moderate Growth Scenario projections. Conversely, some parties may be interested in what happens to Knox County if growth is slowed, either through an intervention strategy or through natural market forces and what impact, if any, do different housing types have on the County. Therefore, a *Slower Growth* scenario was developed, reflecting a 25% reduction in the growth rate, and a *Higher Multifamily* scenario was developed that assumes a higher mix of multifamily units (apartment and condominium units).

Fiscal Impact Analysis

•  
Capital Facility Analysis

•  
Impact Fee Systems

•  
Land Policy Planning

•  
Economic and Market Analysis

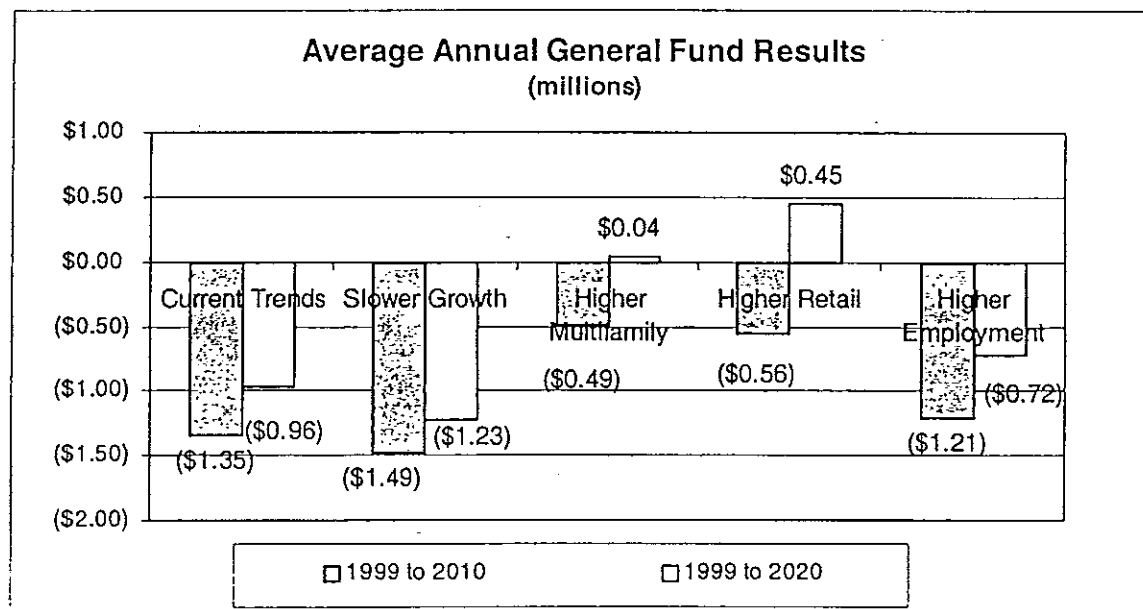
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In order to gain a better understanding of how sales tax and employment affect Knox County fiscally, a *Higher Retail* scenario was developed that assumes the unincorporated County is more successful than the City at capturing regional-serving retail. A *Higher Employment* scenario was also developed that assumes the unincorporated County is able to capture a larger share of Countywide employment growth, resulting in a job to housing ratio increase of approximately 23% in the unincorporated County (4,822 more jobs over Current Trends). By analyzing these different scenarios, the County will have a useful tool from which to base land use and other policy decisions.

## C. Fiscal Impact Results

### 1. General Fund

The chart below summarizes the average annual net fiscal results (revenues minus operating expenditures) for the General Fund. The annual results are discussed in later sections. The net results for all five scenarios are shown and include operating expenses and revenues as defined in the separate Level of Service document. All results are those accruing from new growth only, and do not include costs and revenues from the existing population and employment base of the County.



Over the short-term (1999 to 2010), the Higher Multifamily and Higher Retail scenarios produce the best results, average annual net *deficits* of approximately \$490,000 and \$560,00, respectively. This is followed by Higher Employment (\$1.21 million), Current Trends (\$1.35 million) and Slower Growth (\$1.49 million).

Over the 22-year analysis period, the Higher Retail scenario generates the best result, average annual net *revenues* of approximately \$450,000. This is followed the Higher Multifamily scenario, which also generates average annual net *revenues* over the long-term, approximately \$40,000. The remaining three scenarios generate net deficits, with the Higher Employment



generating the smallest deficit, approximately \$720,000. This is followed by Current Trends (\$960,000) and Slower Growth (\$1.23 million).

- The Higher Retail scenario produces the best results because of the additional 1.5 million square feet of retail space assumed under this scenario.
- Over the 22-year analysis period, the Higher Multifamily scenario produces the second best results. Although essentially the same number of housing units is constructed as under Current Trends, multifamily units generate less costs on a per unit basis than lower density, single family-detached units for services such as law enforcement, health and parks and recreation than. These lower costs are greater than the loss in Property Taxes due to lower values.
- Similar to the Higher Retail scenario, the Higher Employment scenario produces the third best results because of the over 1.1 million square feet of additional nonresidential space assumed under this scenario.
- The Current Trends scenario is the second to worst scenario, showing average annual deficits of \$1.35 million and \$960,000 in 2010 and 202, respectively. This indicates that the County's existing revenue structure should be evaluated.
- The Slower Growth scenario produces the largest deficits because the revenues (primarily Property Tax and Local Option Sales Tax) are not enough to cover the operating costs associated with new capital facilities that are built, relative to the other scenarios.
- The average annual net revenues of \$450,000 generated by the Higher Retail scenario from 1999 to 2020 is less than 1% of the FY99 General Fund budget. This could be considered, within the margin of error, as fiscally neutral.

## 2. *Other Funds.*

The table below summarizes the average annual net fiscal results (revenues minus operating expenditures) for the other County Funds. The annual results are discussed in later sections. The net results for all five scenarios are shown and include operating and capital expenses and revenues as defined in the separate Level of Service document. All results are those accruing from new growth only, and do not include costs and revenues from the existing population and employment base of the County.

Average Annual Results From New Growth in 2010 and 2020  
All Other Funds

Fund	SCENARIO									
	Current Trends		Slower Growth		Higher MF		Higher Retail		Higher Emp.	
	2010	2020	2010	2020	2010	2020	2010	2020	2010	2020
Gen. Purp. School Fund	(\$5.36)	(\$8.60)	(\$4.60)	(\$6.55)	(\$5.55)	(\$8.29)	(\$2.46)	(\$3.59)	(\$4.73)	(\$7.65)
School Con. Fund	\$3.80	\$7.57	\$2.11	\$5.75	\$3.45	\$7.36	\$4.43	\$8.66	\$3.99	\$7.85
General Debt Fund	(\$12.16)	(\$12.86)	(\$12.41)	(\$13.36)	(\$12.24)	(\$12.99)	(\$12.13)	(\$12.82)	(\$12.14)	(\$12.84)
Rec. Const. Fund	(\$0.25)	(\$0.45)	(\$0.18)	(\$0.31)	(\$0.18)	(\$0.34)	(\$0.23)	(\$0.42)	(\$0.24)	(\$0.45)
Solid Waste Fund	\$0.13	\$0.23	\$0.10	\$0.17	\$0.16	\$0.26	\$0.13	\$0.24	\$0.13	\$0.23
Library Fund	(\$1.02)	(\$0.91)	(\$1.02)	(\$0.88)	(\$1.05)	(\$0.96)	(\$1.00)	(\$0.89)	(\$1.01)	(\$0.89)
Highway Fund	(\$0.18)	(\$0.34)	(\$0.13)	(\$0.27)	(\$0.24)	(\$0.40)	\$0.03	\$0.02	(\$0.14)	(\$0.28)
Total	(\$15.03)	(\$15.38)	(\$16.13)	(\$15.44)	(\$15.64)	(\$15.35)	(\$11.23)	(\$8.80)	(\$14.14)	(\$14.03)

As the table above indicates, all scenarios generate average annual net *deficits*. Over the short-term (1999 to 2010), the Higher Retail scenario produces the smallest deficits, average annual net *deficits* of approximately \$11.23million. This is followed by Higher Employment (\$14.14 million), Current Trends (\$15.03 million), Higher Multifamily (\$15.64 million) and Slower Growth (\$16.13 million).

Over the 22-year analysis period, the Higher Retail scenario generates the best result, average annual net *deficits* of approximately \$8.80 million. This is followed the Higher Employment (\$14.03 million), Higher Multifamily (\$15.35 million), Current Trends (\$15.38 million) and Slower Growth (\$15.44 million).

Major reasons for the results are summarized below.

- The reasons for the scenario results are due primarily to the reasons discussed above for the General Fund.
- The School Construction and Solid Waste Funds are the only Funds that generate net *revenues* under all scenarios. The School Construction Fund benefits from the excess capacity that exists in the Knox County School System and the Solid Waste Fund results indicate that its revenue structure is sufficient.
- The Highway Fund generates net *revenues* under Higher Retail. This is because Local Option Sales Tax is the largest revenue source for this Fund and is distributed in the State of Tennessee using a situs-based (point-of-sale) formula.
- The results for the General Debt Fund suggest that the County may want to consider alternative revenue sources, such as impact fees, to assist with funding new growth's fair share of capital facility needs.

#### D. Conclusions

Based on the analysis, the County is not in a position to provide current levels of service to new development under the present revenue structure without finding new revenue sources or raising existing rates. Otherwise, the existing development base will have to subsidize new

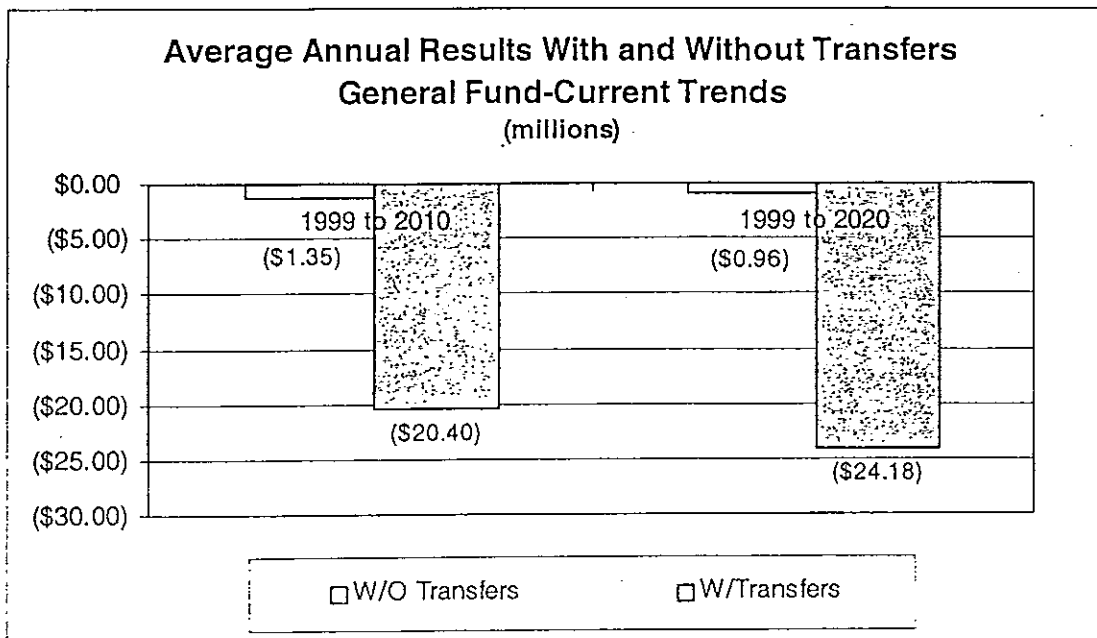
growth, or existing levels of service will have to be decreased. The existing revenue structure should be evaluated by the County in the near-term.

This becomes more apparent when the transfers that would be required from the General Fund to balance the deficits generated by new growth on the County's various Funds are shown. As the table below illustrates, the General Fund would need to transfer almost \$511 million, or \$23 million annually, over the 22-year analysis period to balance the various County Funds under Current Trends.

Transfers to Funds (\$1,000's)

Fund	22-Year Total	Average Annual
General Purpose School Fund	\$189,210	\$8,600
School Construction Fund	\$1,037	\$47
General Debt Fund	\$283,010	\$12,864
Recreation Construction Fund	\$9,972	\$453
Solid Waste Fund	\$0	\$0
Library Fund	\$20,114	\$914
Highway Fund	\$7,597	\$345
<b>Total</b>	<b>\$510,940</b>	<b>\$23,225</b>

The chart below shows the *adjusted* average annual results to the General Fund if it were necessary to transfer General Fund dollars to cover deficits generated by other Funds. This adjustment has tremendous impact on the fiscal results. Average annual deficits *increase* from \$1.35 million to \$20.40 million over the short-term (1999 to 2010), an increase of over \$19 million. Instead of average annual deficits decreasing over the long-term (1999 to 2020), the deficits *increase* from \$960,000 to \$24.18 million, an increase of over \$23 million.



The analysis of the General Fund, General Purpose School Fund, School Construction Fund and Highway Fund illustrates the importance of Local Option Sales Tax to the County's current revenues structure. Given the fact this revenue source is distributed based on point-of-sale, retail uses may want to be considered as a vital element of the County's economic development plan.

Although not surprising, the analysis also shows that if the County is to encourage the current residential development pattern in the future, it clearly benefits fiscally from attracting additional economic development (i.e. nonresidential square footage). The primary reasons are increased Local Option Sales Tax (retail space) and Property Tax (all nonresidential space).

Because of the lower per unit costs associated with lower household sizes and other characteristics, the County also benefits fiscally by encouraging higher density, multifamily housing.

It is important to acknowledge that fiscal issues are only one concern. Environmental, land use, housing affordability, jobs/housing balance, and traffic issues must also be taken into consideration when making any final decisions on what is best for Knox County.

## II. METHODOLOGY AND MAJOR ASSUMPTIONS

The analysis projects the fiscal impacts of different growth scenarios within Knox County from 1999 to 2020, based on the current level of service. The FY99 budget was used as a baseline since it is representative of the current fiscal year operations at the time of the data collection effort. Constant 1999 dollars are used throughout the study. The 1998 population and job estimates, in addition to the current number of dwelling units, were used to calculate unit costs and service level thresholds.

In order to provide an understanding of the overall methodology used in this fiscal impact analysis, a brief explanation of the FISCALS process follows. The FISCALS software utilizes two types of input data. The first category of demographic/economic projections is called Demand Base data inputs. These numerical projections include data such as population, housing units, employment, and commercial and office/industrial space.

The second type of input data relates to the government service levels, costs and revenues. The government service level, cost and revenue data used in the fiscal analysis have been determined and agreed upon by TA and County personnel. This data has been incorporated into TA's FISCALS system designed for this assignment to calculate the annual costs, revenues, and capital facilities by department or function, where appropriate.

The following major assumptions regarding the fiscal methodology should be noted:

Marginal, Growth-Related Costs and Revenues: For this analysis, costs and revenues that are directly attributable to new growth are included. Both *operating and capital* costs are taken into consideration. Wherever possible, a marginal cost approach was used. In some cases, the data used are average costs, based on a decision by County staff and TA that this is the best information available at this time. Some costs are not expected to be impacted by demographic changes, and may be fixed in this analysis. This is true for many administrative functions. In some cases, there is a realization that costs are semi-variable.

Level of Service: The cost projections are based on the assumption that the current level of spending, as provided in FY99 budget, will continue through the 22-year analysis period. The current level of spending is referred to as the current level of service (LOS) in this type of analysis.

Revenue Structure and Tax Rates: Revenues are projected assuming that the current revenue structure and tax rates, as defined by the FY99 adopted budget, will not change during the analysis period.

Inflation Rate: The rate of inflation is assumed to be zero throughout the projection period, and cost and revenue projections are in constant 1999 dollars. This assumption is in accord with current budget data and avoids the difficulty of speculating on inflation rates and their effect on cost and revenue categories. It also avoids the problem of interpreting results expressed in inflated dollars over an extended period of time.

**Non-Fiscal Evaluations:** It should be noted that while a fiscal impact analysis is an important consideration in planning decisions, it is only one of several issues that should be considered. Environmental and social issues, for example, should also be considered when making planning and policy decisions. The above notwithstanding, this analysis will enable interested parties to understand the fiscal implications of future development.

### **III. SCENARIOS**

Based on existing conditions in Knox County, as well as recent and projected trends, TA and County staff developed five growth scenarios to be analyzed as part of the fiscal impact analysis.

Projections were developed for both the unincorporated County and the City of Knoxville. It is necessary to develop projections for the City of Knoxville for two reasons: (1) to project new public school students who will attend Knox County schools; and (2) to project the demand base for Countywide services. Countywide services are those Knox County services that serve the entire County, regardless of municipal boundaries, such as General Government activities. Other Knox County services, such as the patrol operations of the Sheriff's Department are affected by municipal boundaries, as the City of Knoxville has its own Police force.

Each of the five scenarios has unique characteristics, thereby allowing the County to understand the fiscal impacts, as well as implications, of various development-related variables over time. An obvious development scenario is the base case, or current rates of growth continuing. Therefore a Current Trends scenario was developed using the Knoxville-Knox County Metropolitan Planning Commission's Moderate Growth Scenario projections. Conversely, some parties may be interested in what happens to Knox County if growth is slowed, either through an intervention strategy or through natural market forces and what impact, if any, do different housing types have on the County. Therefore, a Slower Growth scenario was developed, reflecting a 25% reduction in the growth rate, and a Higher Multifamily scenario was developed that assumes a higher mix of multifamily units (apartments and condominium units).

In order to gain a better understanding of how sales tax and employment impact Knox County, a Higher Retail scenario was developed that assumes the unincorporated County is more successful than the City at capturing regional-serving retail. A Higher Employment scenario was also developed that assumes the unincorporated County is able to capture a larger share of Countywide employment growth, resulting in a job to housing ratio increase of approximately 23% in the unincorporated County. That is an increase of 4,842 jobs in the unincorporated County. By analyzing these different scenarios, the County will have a useful tool from which to base land use and other policy decisions.

#### **A. Scenario One-Current Trends**

The Current Trends scenario assumes the current pattern between the City and unincorporated County continues over time, with the unincorporated County absorbing more new residential units than jobs, whereas the City continues to add more jobs than housing. It also assumes, as do all the scenarios, that City and unincorporated County boundaries remain the same from 1999 to 2020. The table below summarizes the differences between this scenario and the other four. The Appendix shows the increases for 2010 and 2020 by scenario.

Net Increase by Scenario, 1999 to 2020  
Knox County Fiscal Impact Analysis

Category	SCENARIO									
	Current Trends		Slower Growth		Higher Multi.		Higher Retail		Higher Emp.	
	Unincorp.*	City**	Unincorp.*	City**	Unincorp.*	City**	Unincorp.*	City**	Unincorp.*	City**
Population	81,930	8,369	61,448	6,277	71,784	8,369	81,930	8,369	81,930	8,369
<i>Housing Units</i>										
Single Family	29,222	4,147	21,916	3,110	24,729	4,147	29,222	4,147	29,222	4,147
Multifamily	15,736	3,027	11,802	2,271	20,232	3,027	15,736	3,027	15,736	3,027
Total	44,958	7,174	33,718	5,381	44,961	7,174	44,958	7,174	44,958	7,174
<i>Full-Time Equivalent Employment</i>										
Retail	4,916	1,004	3,687	753	4,307	1,004	7,416	1,004	5,611	1,004
Office	4,916	2,092	3,687	1,569	4,307	2,092	4,916	2,092	5,971	2,092
Industrial/Flex	13,109	2,176	9,832	1,632	11,485	2,176	13,109	2,176	14,897	2,176
Other	8,193	1,674	6,145	1,255	7,178	1,674	8,193	1,674	9,496	1,674
Total	31,134	6,946	23,351	5,209	27,277	6,946	33,634	6,946	35,975	6,946
<i>Nonresidential Sq. Ft. (1,000s)</i>										
Retail	1,475	402	1,106	301	1,292	402	2,966	402	1,683	402
Office	1,298	586	973	439	1,137	586	1,298	586	1,576	586
Industrial/Flex	4,156	690	3,117	517	3,641	690	4,156	690	4,722	690
Total	6,928	1,677	5,196	1,258	6,070	1,677	8,420	1,677	7,982	1,677

\*Assumes 300 sq. ft. per retail employee (400 sq. ft. under Higher Retail), 264 per office employee and 317 per industrial/flex employee

\*\*Assumes 400 sq. ft. per retail employee, 280 per office employee and 317 per industrial/flex employee

## 1. Countywide

The 1998 County population of 366,846 is projected to increase by 90,299 persons, or 25%, to a total of 457,145 in 2020. This amounts to 4,104 annually. Over the same time period, housing unit growth is projected to increase by approximately 52,132 units over the current number of 172,095, an increase of 30%, or 2,370 annually.

Countywide full-time equivalent employment is projected to increase by 38,080 jobs from 1999 to 2020. This is an increase of approximately 1,730 annually. Countywide retail employment is projected to increase by 5,920 jobs, office employment by 7,008 jobs, industrial/flex by 15,285 jobs. In addition, employment in categories such as agriculture, local government, etc. is projected to increase by 9,867 jobs. These are increases of 269, 319, 695 and 448, respectively, on an annual basis.

## 2. City of Knoxville

In the City of Knoxville, the current population of 167,854 is projected to increase by 8,369 persons, or 5%, to a total of 176,223 in 2020. This amounts to 380 annually. Housing unit growth is projected to increase by 7,174 units over the current number of 82,717, an increase of 9%, or 326 annually.

The full-time equivalent employment in the City of Knoxville is projected to increase by 6,946, or 20%, from 1999 to 2020. This is an increase of 315 jobs annually. Retail employment in the City is projected to increase by 1,004 jobs, office employment by 2,092 jobs and industrial/flex by 2,176 jobs. In addition, employment in categories such as agriculture, local government, etc. is projected to increase by 1,674 jobs. These are increases of 45, 95, 99, and 76, respectively, on an annual basis.



### 3. *Unincorporated Knox County*

In unincorporated Knox County, the current population of 198,992 is projected to increase by 81,930 persons, or 41%, to a total of 280,922 in 2020. Housing unit growth is projected to increase by approximately 44,958 units over the current number of 89,378, an increase of 50%.

The full-time equivalent employment in the unincorporated County is projected to increase by 31,133 jobs, or 41%, from 1999 to 2020. This is an increase of 1,415 jobs annually. Retail employment in the unincorporated County is projected to increase by 4,916 jobs, office employment by 4,916 jobs as well, and industrial/flex by 13,109 jobs. In addition, employment in categories such as agriculture, local government, etc. is projected to increase by 8,193 jobs. These are increases of 223, 223, 595, and 372, respectively, on an annual basis.

To project residential growth, TA utilized the Knoxville-Knox County Metropolitan Planning Commission's Moderate Growth Scenario projections. Nonresidential projections for the Current Trends scenario were derived by assuming the same number of jobs per capita continues over the 22-year analysis period. For example, there are currently 11,781 full-time equivalent retail jobs in the unincorporated County. When this is divided by the 1998 population in the unincorporated County, the number of retail jobs per capita is .06. This relationship is assumed from 1999 to 2020. Jobs per capita information are shown in the table below.

**Jobs Per Capita**

City		Unincorp. County	
Retail	0.12	Retail	0.06
Office	0.25	Office	0.06
Industrial/Flex	0.26	Industrial/Flex	0.16
Other	0.20	Other	0.10
<b>Total</b>	<b>0.83</b>		<b>0.38</b>

### B. *Scenario Two-Slower Growth*

The Slower Growth scenario assumes the jobs to housing disparity between the City and unincorporated County remains, however, residential and nonresidential growth is approximately 75% of the Current Trends scenario.

#### 1. *Countywide*

Under Slower Growth, County population is projected to increase by 67,724 persons, or 18%, to a total of approximately 434,570. This amounts to 3,078 persons annually. Over the same time period, housing unit growth is projected to increase by approximately 39,099 units over the current number of 172,095, an increase of 23%, or 1,777 annually.

Countywide full-time equivalent employment is projected to increase by 28,560 jobs, or 13%, from 1999 to 2020. This is an increase of 1,298 jobs annually. Countywide retail employment is projected to increase by 4,440 jobs, office employment by 5,256 jobs and

industrial/flex by 11,464 jobs. In addition employment in categories such as agriculture, local government, etc. is projected to increase by 7,400 jobs. These are increases of 202, 239, 521, and 336, respectively, on an annual basis.

## 2. *City of Knoxville*

In the City of Knoxville, the current population of 167,854 is projected to increase by 6,277 persons, or 4%, to a total of 174,131 in 2020. This amounts to 285 annually. Housing unit growth is projected to increase by approximately 5,381 units over the current number of 82,717, an increase of 7%, or 245 units annually.

The full-time equivalent employment in the City of Knoxville is projected to increase by 5,210, or 4%, from 1999 to 2020. This is an increase of 237 jobs annually. Retail employment in the City is projected to increase by 753 jobs, office employment by 1,569 jobs and industrial/flex by 1,632 jobs. In addition employment in categories such as agriculture, local government, etc. is projected to increase by 1,255 jobs. These are increases of 34, 71, 74, and 57, respectively, on an annual basis.

## 3. *Unincorporated Knox County*

In unincorporated Knox County, the current population of 198,992 is projected to increase by 61,448 persons, or 31%, to a total of approximately 260,440 in 2020. This amounts to 2,793 annually. Housing unit growth is projected to increase by approximately 33,719 units over the current number of 89,378, an increase of 38%, or 1,533 units annually.

The full-time equivalent employment in the unincorporated County is projected to increase by 23,350 jobs, or 31%, from 1999 to 2020. This is an increase of 1,061 jobs annually. Retail employment in the unincorporated County is projected to increase by 3,687 jobs, office employment by 3,687 jobs and industrial/flex by 9,832 jobs. In addition, employment in categories such as agriculture, local government, etc. is projected to increase by 6,145 jobs. These are increases of 168, 168, 447 and 279, respectively, on an annual basis.

## C. *Scenario Three-Higher Multifamily*

The Higher Multifamily scenario assumes the current population, housing unit and employment growth in Knox County continues to 2020. However, the mix of housing units in the *unincorporated* County is assumed to change. Multifamily housing (apartments and condominiums) comprise 36% of new housing units in the unincorporated County under Current Trends. For purposes of this scenario, it is assumed that new multifamily units added between 1999 and 2020 comprise 45% of the net increase in housing units, or 23,260 units versus 18,764 in Current Trends.

### 1. *Countywide*

As a result of the change in housing unit mix in the unincorporated County under this scenario, the net increase in Countywide population is approximately 10,153 persons less than Current Trends. This is a result of the smaller household sizes for multifamily units compared to single family units. The change in housing unit mix results in 4,496 multifamily units under this scenario. The number of single family units decreases by 4,493 units.

**2. City of Knoxville**

Population, housing unit and employment growth in the City of Knoxville is the same under this scenario as under Current Trends.

**3. Unincorporated County**

As a result of the change in housing unit mix in the unincorporated County under this scenario, the net increase in unincorporated County population is approximately 10,145 persons less than Current Trends. This is a result of the smaller household sizes for multifamily units compared to single family units. The change in housing unit mix results in 4,496 additional multifamily units under this scenario. The number of single family units decreases by 4,493 units.

**D. Scenario Four-Higher Retail**

The Higher Retail scenario assumes that the current population, housing unit and employment growth continues to 2020. However, it is assumed the unincorporated County captures retail space beyond the typical neighborhood-scale retail space it is currently attracting. That is, the unincorporated County is successful at attracting more regional-serving retail that otherwise would have located within the City. For purposes of the scenario, it is assumed that each new retail employee generates 400 square feet of retail space compared to 300 square feet under Current Trends because of the increased community and regional serving retail space.

**1. Countywide**

The net increase in Countywide population and housing units is the same as under Current Trends. However, the unincorporated County captures approximately 1,000,000 more square feet of regional-serving retail space than under Current Trends, which results in an additional 2,500 retail jobs over Current Trends.

**2. City of Knoxville**

Population, housing unit and employment growth in the City of Knoxville is the same under this scenario as under Current Trends.

**3. Unincorporated Knox County**

Population, housing unit and employment growth in the unincorporated County is the same under this scenario as Current Trends. However, the unincorporated County captures approximately 1,000,000 square feet more retail space than under Current Trends, which results in 2,500 additional retail jobs.

**E. Scenario Five-Higher Employment**

The Higher Employment scenario assumes that the current population and housing unit growth continues to 2020. However, it is assumed the jobs/housing ratio in the unincorporated County increases from Current Trends ratio of .69 (31,133) jobs divided by 44,958 housing units) to .85, an increase of 23%.

**1. Countywide**

The net increase in Countywide population, housing units and employment is the same as under Current Trends.

**2. City of Knoxville**

Population, housing unit and employment growth in the City of Knoxville is the same under this scenario as under Current Trends.

**3. Unincorporated County**

Population and housing unit growth in the unincorporated County is the same under this scenario as Current Trends. However, as a result of the higher jobs/housing ratio in the unincorporated County, there are 4,842 additional jobs in the unincorporated County. This translates into approximately 1.05 million more nonresidential square feet. This increase is as follows: 208,000 square feet of retail space, 278,000 square feet of office space and 567,000 square feet of industrial/flex space.

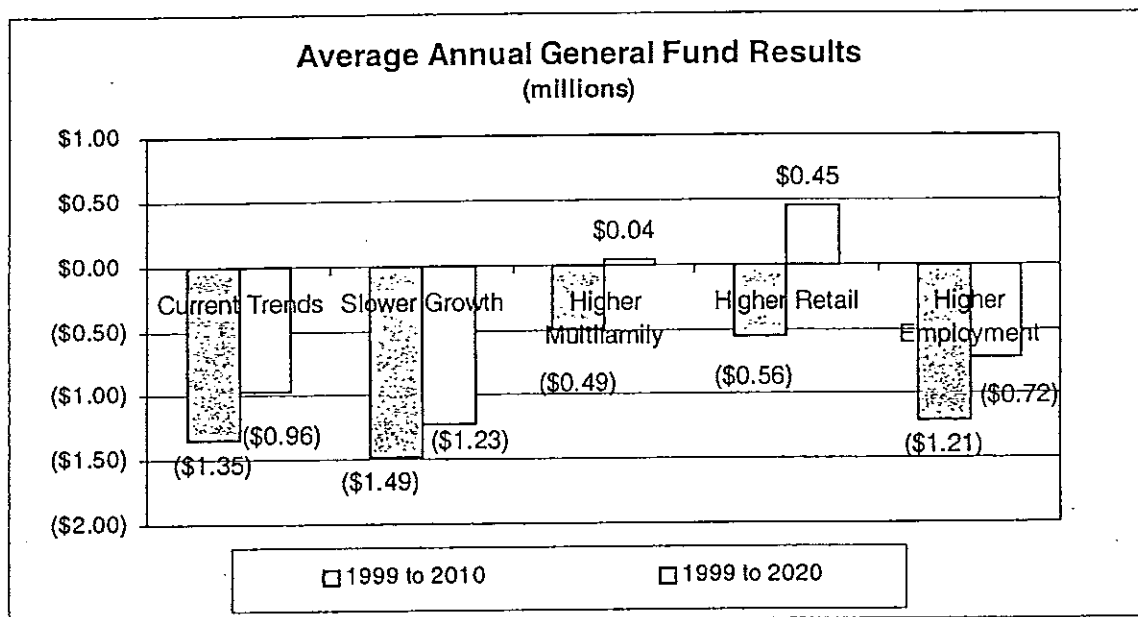
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#### IV. GENERAL FUND FISCAL IMPACT RESULTS

The fiscal impacts are discussed in terms of average annual and annual net results. The average annual net results are discussed first because it provides a good way of comparing multiple scenarios. All results are those from new growth within the existing County, and exclude costs and revenues from the existing County population and employment base.

##### A. Average Annual Results

The chart below summarizes the average annual net fiscal results (revenues minus operating expenditures) to the General Fund. The results are shown for two time periods: 1) 1999 to 2010, and 2) 1999 to 2020. The net results for all five scenarios are shown and include operating expenses and revenues as defined in the separate Level of Service document.



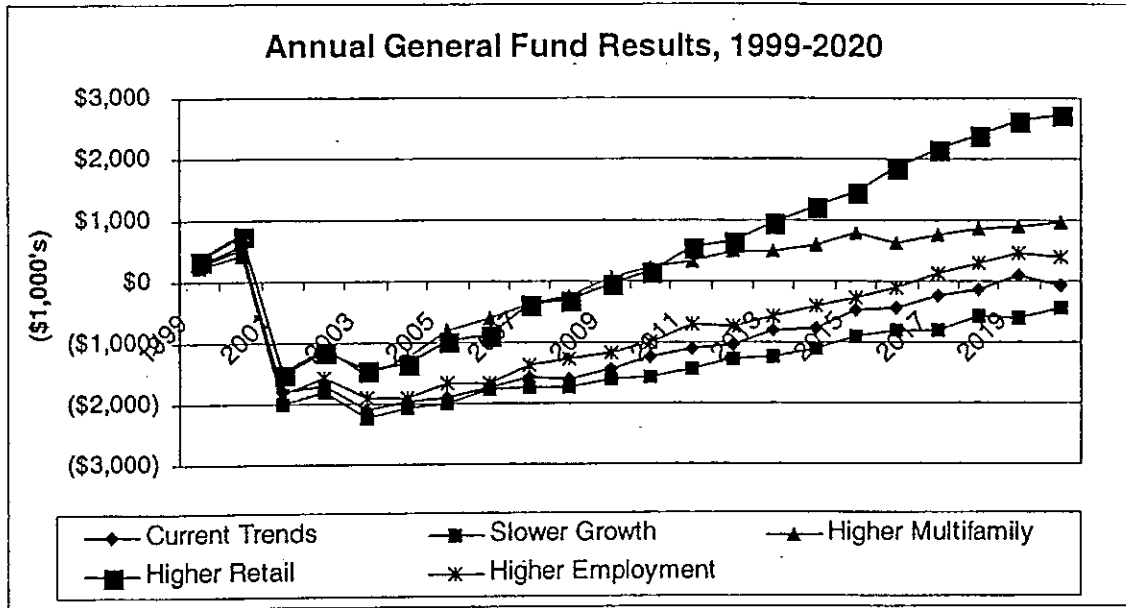
As the chart above indicates, only two scenarios generate average annual net revenues. Over the short-term (1999 to 2010), the Higher Multifamily and Higher Retail scenarios produce the best results, average annual net *deficits* of approximately \$490,000 and \$560,00, respectively. This is followed by Higher Employment (\$1.21 million), Current Trends (\$1.35 million) and Slower Growth (\$1.49 million).

Over the 22-year analysis period, the Higher Retail scenario generates the best result, average annual net *revenues* of approximately \$450,000. This is followed the Higher Multifamily scenario, which also generates average annual net *revenues* over the long-term, approximately \$40,000. The remaining three scenarios generate net deficits, with the Higher Employment generating the smallest deficit, approximately \$720,000. This is followed by Current Trends (\$960,000) and Slower Growth (\$1.23 million). Major reasons for the results are summarized below.

- The Higher Retail scenario produces the best result over the 22-year analysis period as a direct result of the additional 1.5 million square feet of space assumed under this scenario. Although this increased space generates almost \$6.3 million more in cumulative expenditures (primarily Public Safety) than Current Trends, it also generates approximately \$5.7 million more in Local Option Sales Tax and \$2.4 million more in Property Tax.
- Over the 22-year analysis period, the Higher Multifamily scenario produces the second best result. Although essentially the same number of housing units is constructed as under Current Trends, multifamily units generate less costs on a per unit basis than lower density, single family-detached units for services such as law enforcement, health and parks and recreation than.
- Similar to the Higher Retail scenario, the Higher Employment scenario produces the third best result over the 22-year analysis period as a direct result of the over 1.1 million square feet of additional nonresidential space assumed under this scenario. This scenario generates almost \$6 million more in Public Safety costs than Current Trends; it also generates approximately \$33.7 million more in Local Option Sales Tax and \$3.9 million more in Property Tax.
- The average annual net revenues of \$450,000 generated by the Higher Retail scenario from 1999 to 2020 is less than 1% of the FY99 General Fund budget. This could be considered, within the margin of error, as fiscally neutral.
- The Slower Growth scenario produces the largest deficits because the revenues (primarily Property Tax and Local Option Sales Tax) are not enough to cover the operating costs associated with capital facilities relative to the other scenarios.

## **B. Annual Results**

The charts below show the annual net results for the five scenarios. By showing the results annually, the magnitude, rate of change, and timeline of deficits and revenues can be observed over the 22-year analysis period.



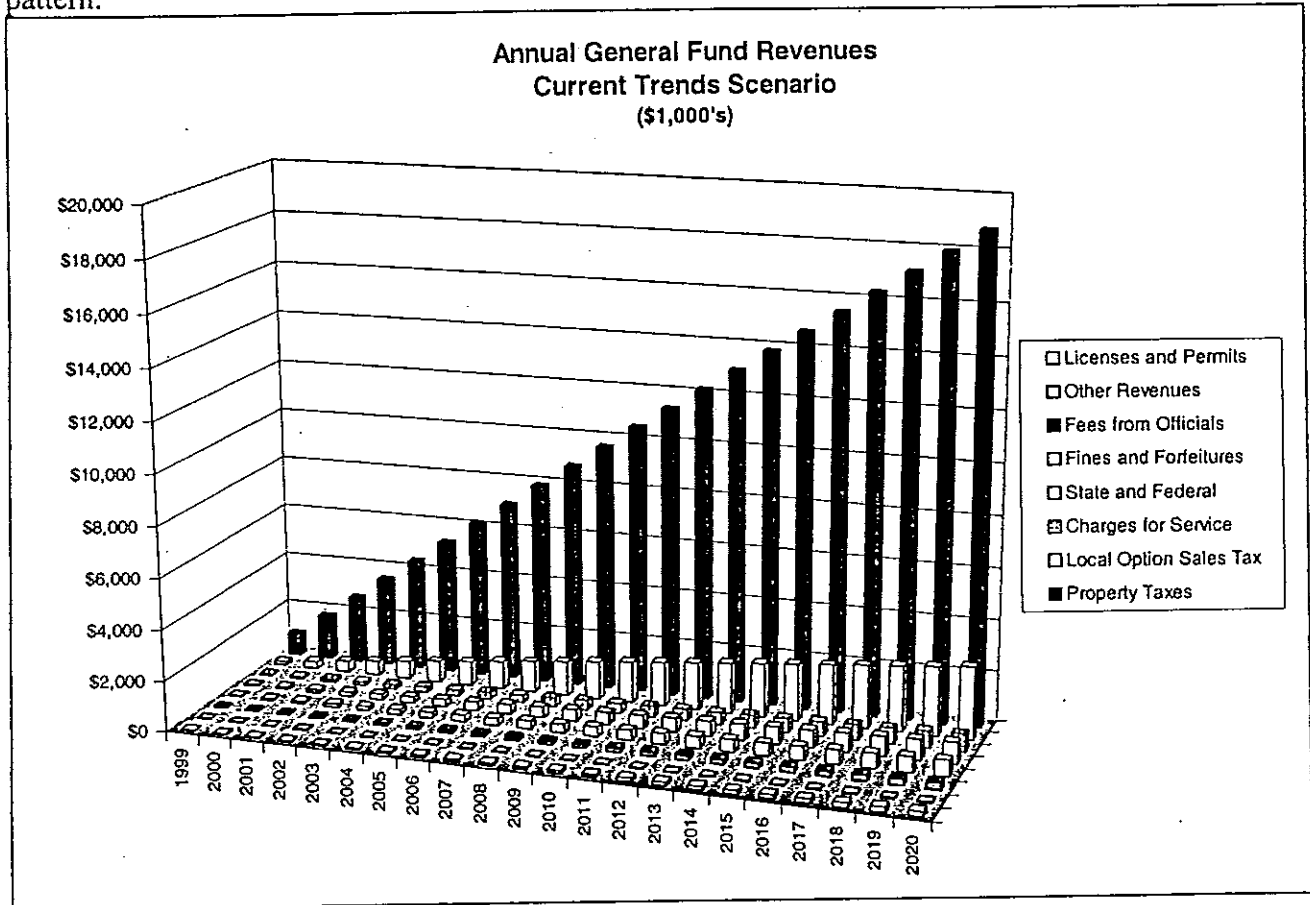
General Fund annual net results follow a similar trend initially for each of the scenarios. The best results occur under the Higher Retail scenario. This scenario generates net revenues in the range of \$2.7 million in 2020. Net revenues for the Higher Multifamily scenario are \$965,000 in 2020, followed by Higher Employment (389,000). Current Trends and Slower Growth both generates annual deficits in 2020, \$56,000 and \$435,000, respectively.

The net revenues for each of the scenarios follow a similar trend in the beginning of the 22-year analysis period. Net revenues are generated the first two years until the opening of the new Justice Center. The net results increase the next year, but decrease sharply in year 5 as Park and Library facilities are opened. The net results follow a general, upward trend as the cumulative effect of revenues generated from new growth increases at a faster rate than cumulative expenditures. Minor dips occur in the net results to 2020 as new facilities are opened.

## V. GENERAL FUND REVENUE DETAILS

### A. Annual Revenues

The chart below shows the annual General Fund revenues by major category from 1999 to 2020 for the Current Trends scenario. The results for the other scenarios follow the same pattern.



### B. Cumulative Revenues

The table below shows cumulative revenues by scenario. Revenues are broken down by major sources. These sources and the reasons for the results are then discussed briefly.



Cumulative General Fund Revenues  
Knox County, Tennessee

Revenue Source	Cumulative Revenues (x\$1,000)									
	Current Trends	%	Slower Growth	%	Higher MF	%	Higher Retail	%	Higher Employ.	%
Property Taxes	\$218,811	77%	\$164,108	77%	\$207,902	80%	\$222,688	69%	\$221,223	76%
Local Option Sales Tax	\$33,284	12%	\$24,963	12%	\$25,897	10%	\$67,035	21%	\$39,002	13%
Licenses and Permits	\$2,380	1%	\$1,785	1%	\$2,380	1%	\$2,380	1%	\$2,380	1%
Fines and Forfeitures	\$7,592	3%	\$5,694	3%	\$6,071	2%	\$7,592	2%	\$7,592	3%
Charges for Service	\$8,044	3%	\$6,033	3%	\$6,438	2%	\$8,059	3%	\$8,077	3%
Other Revenues	\$557	0%	\$417	0%	\$445	0%	\$557	0%	\$557	0%
Fees from Officials	\$3,127	1%	\$2,346	1%	\$2,501	1%	\$3,127	1%	\$3,127	1%
State and Federal	\$9,850	3%	\$7,387	3%	\$7,877	3%	\$9,850	3%	\$9,850	3%
<b>TOTAL</b>	<b>\$283,644</b>	<b>100%</b>	<b>\$212,733</b>	<b>100%</b>	<b>\$259,511</b>	<b>100%</b>	<b>\$321,287</b>	<b>100%</b>	<b>\$291,807</b>	<b>100%</b>

As the table above indicates, the Higher Retail scenario generates the highest cumulative revenues, approximately \$321 million over the 22-year analysis period. This is a result of two factors: 1) the increased property tax as a result of retail space comprising a higher percentage of total nonresidential square footage, and 2) the increased Local Option Sales Tax generated by the increased retail square footage. Higher Employment generates \$291 million in cumulative revenues, followed by Current Trends (\$283 million), Higher Multifamily (\$259 million), and Slower Growth (\$212 million).

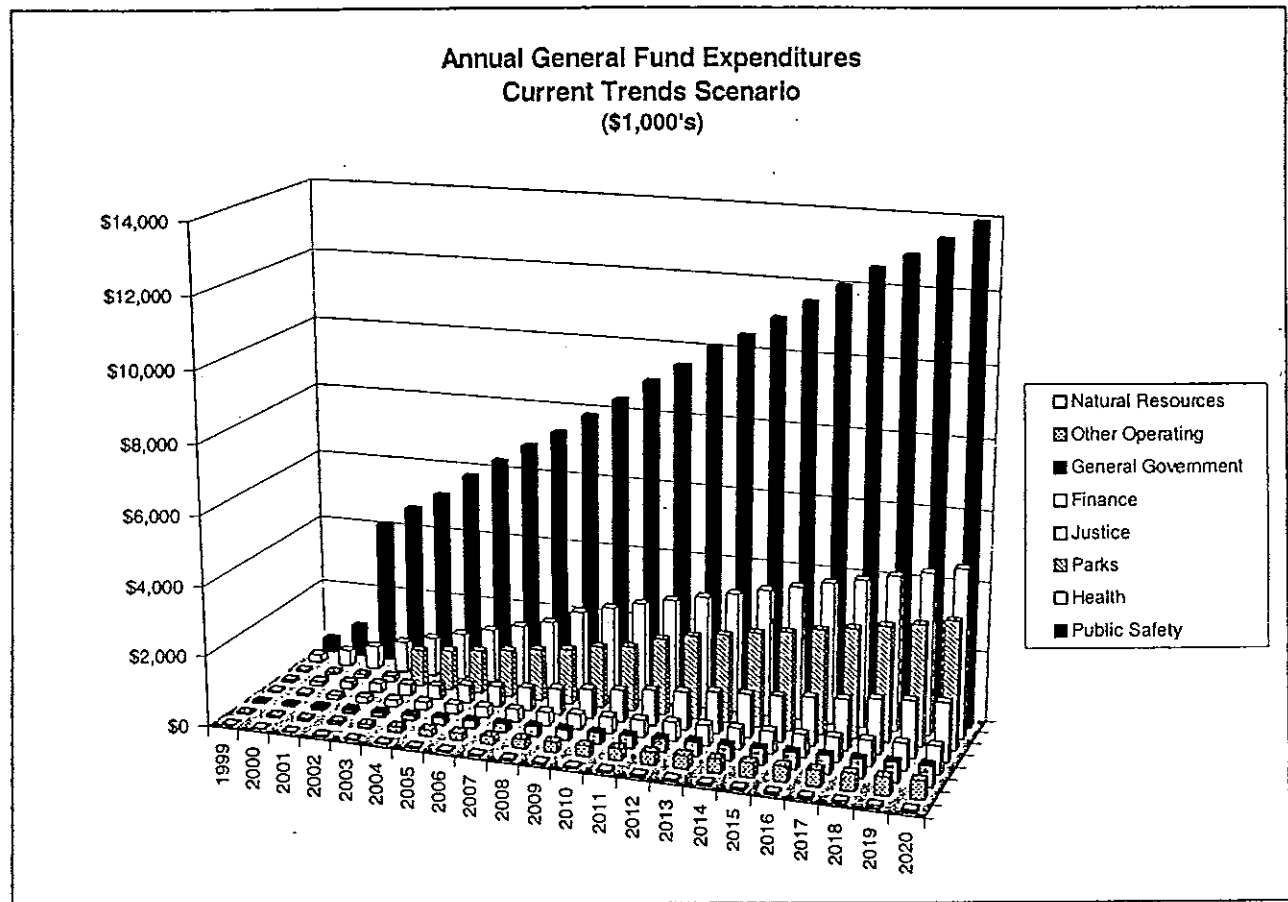
Property Tax revenues represent 69% to 80% of total revenues, depending on scenario. Property Tax comprises a lower percentage under Higher Retail because of the larger amount of Local Option Sales Tax generated under this scenario. Conversely, Property Tax comprises the largest percentage under Higher Multifamily, which generates the second lowest amount of Local Option Sales Tax. The Higher Retail scenario generates the most Property Tax, approximately \$222 million over the 22-year analysis period. As discussed above, this is a direct result of the increased nonresidential square footage. This is followed by Higher Employment (\$221million), Current Trends (\$218 million), Higher Multifamily (\$207 million) and Slower Growth (\$164 million).

Local Option Sales Tax is the second largest revenue source generated by new growth. This revenue source represents 10% to 21% of total revenues, depending on scenario. When combined with Property Tax, these two revenue sources represent 89% to 90% of growth-related revenues. Local Option Sales Tax is highest under the Higher Retail scenario (\$67 million), followed by Higher Employment (\$39 million). This is because both of these scenario assume higher amounts of retail square footage and this revenue source is distributed the State of Tennessee based on point-of-sale.

## VI. GENERAL FUND EXPENDITURE DETAILS

### A. Annual Expenditures

The chart below shows the General Fund expenditures by major category from 1999 to 2020. The results for the other scenarios follow the same pattern.



### B. Cumulative Expenditures

The table below shows cumulative expenditures by scenario. The General Fund expenditures are for operating costs only and are broken down into major categories in the table below. These categories and the reasons for the results are then discussed briefly.

Cumulative General Fund Expenditures  
Knox County, Tennessee

Expenditure	Cumulative Expenditures (x\$1,000)									
	Current Trends	%	Slower Growth	%	Higher MF	%	Higher Retail	%	Higher Employ.	%
General Government	\$7,102	2%	\$5,326	2%	\$5,696	2%	\$7,155	2%	\$7,223	2%
Other Operating	\$6,151	2%	\$4,613	2%	\$4,936	2%	\$6,205	2%	\$6,275	2%
Finance	\$9,363	3%	\$7,022	3%	\$7,538	3%	\$9,521	3%	\$9,725	3%
Natural Resources	\$939	0%	\$704	0%	\$751	0%	\$939	0%	\$939	0%
Parks	\$34,053	11%	\$24,832	10%	\$31,777	12%	\$34,053	11%	\$34,053	11%
Justice	\$18,977	6%	\$13,772	6%	\$14,883	6%	\$18,977	6%	\$18,977	6%
Health	\$56,817	19%	\$42,613	18%	\$45,670	18%	\$56,916	18%	\$57,043	19%
Public Safety	\$171,363	56%	\$140,810	59%	\$147,294	57%	\$177,560	57%	\$173,520	56%
<b>TOTAL</b>	<b>\$304,764</b>	<b>100%</b>	<b>\$239,692</b>	<b>100%</b>	<b>\$258,545</b>	<b>100%</b>	<b>\$311,326</b>	<b>100%</b>	<b>\$307,755</b>	<b>100%</b>

As the table above indicates, the Higher Retail scenario generates the highest amount of cumulative General Fund expenditures at \$311 million. This is a direct result of the increased public safety costs associated with the additional 1.5 million square feet of regional serving retail space. Higher Employment generates \$307 million in cumulative General Fund expenditures, followed Current Trends (\$304 million), Higher Multifamily (\$258) and Slower Growth (\$239 million). Of the individual expenditure categories, Public Safety expenditures represent the greatest amount of operating expenditures, comprising approximately 56%-59% of cumulative expenditures. This is followed by Health (18%-19%) and Parks (10%-12%).

Public Safety expenditures are greatest under the Higher Retail scenario (\$177 million). This is because of the increased cost to serve the approximately 1.5 million square feet of additional retail space assumed under this scenario. Retail space generates much higher costs on a per square foot basis than other nonresidential categories. The Higher Retail scenario generates the second largest amount of Public Safety expenditures. This also is a result of the increased cost to serve additional nonresidential square footage. However, Public Safety costs are lower under this scenario because retail space comprises a smaller percentage of total nonresidential space under this scenario.

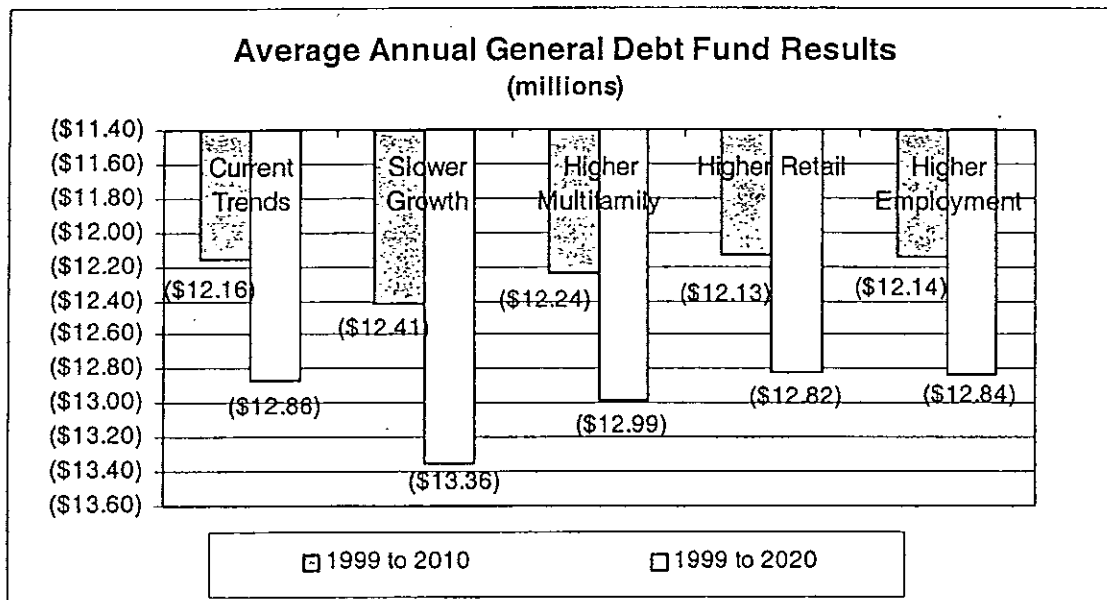
Health is the second largest growth-related expenditure. The Higher Employment scenario generates the largest Health expenditures. This is because of the increased environmental health-related expenditures directed to nonresidential activity (i.e. inspections). The Higher Retail scenario generates the second highest Health expenditures for the same reasons. The Slower Growth scenario generates the least Health expenditures due to its lower population and employment increase.

## VII. GENERAL DEBT FUND FISCAL IMPACT RESULTS

The County uses the General Debt Fund to account for capital expenditures and debt service payments. As is the case with the General Fund, the fiscal impacts are discussed in terms of average annual and annual net results. The average annual net results are discussed first because it provides a good way of comparing multiple scenarios. All results are those from new growth within the existing County, and exclude costs and revenues from the existing County population and employment base.

### A. Average Annual Results

The chart below summarizes the average annual net fiscal results (revenues minus operating expenditures) to the General Debt Fund. The results are shown for two time periods: 1) 1999 to 2010, and 2) 1999 to 2020. The net results for all five scenarios are shown and include operating expenses and revenues as defined in the separate Level of Service document.



As the chart above indicates, all scenarios generate net deficits to the General Debt Fund in both time periods. Over the short-term (1999 to 2010), the average annual results are quite similar for all five scenarios. The Higher Retail and Higher Employment scenarios produce the smallest deficits, average annual deficits of \$12.13 million and \$12.14 million, respectively. This is followed by Current Trends (\$12.16 million) Higher Multifamily (\$12.24 million) and Slower Growth (\$12.41 million).

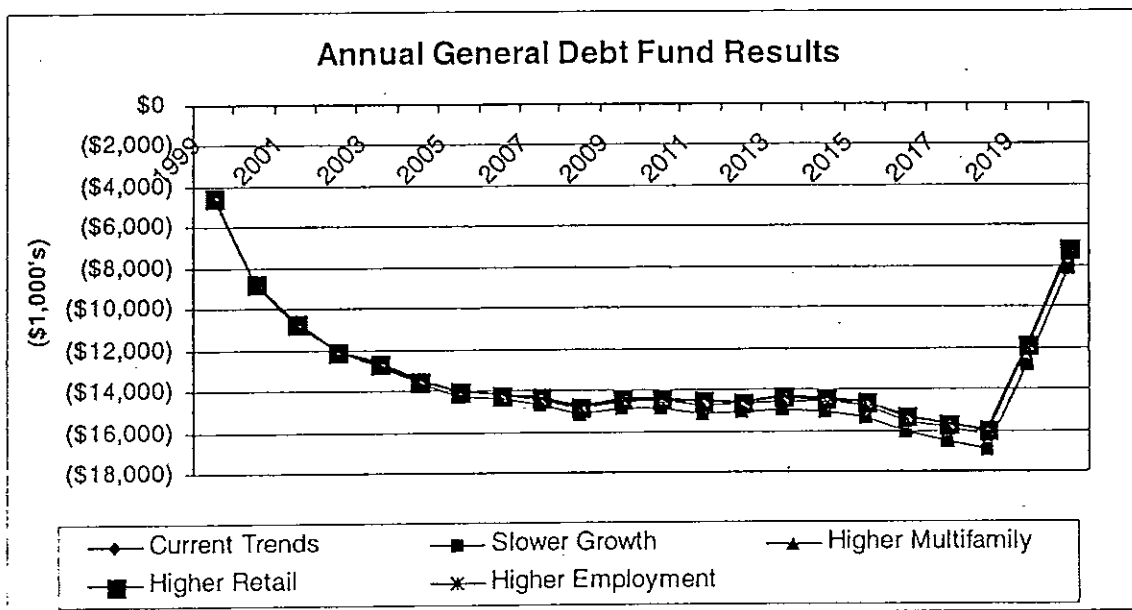
Average annual net deficits increase over the 22-year analysis period. The Higher Retail scenario generates the best result, average annual net deficits of \$12.82 million. This is followed by Higher Employment (\$12.84 million) Current Trends (\$12.86 million), Higher Multifamily (\$12.99 million) and Slower Growth (\$13.36 million).

Major reasons for the results are summarized below.

- The average annual results are similar for the Current Trends, Higher Retail, and Higher Employment scenarios because the need for the majority of capital expenditures is directly related to population and housing and these three scenarios assume the same population and housing increase. In addition, these capital expenditures are financed through bond issues, which reduces the impact of required facilities compared to pay-as-you-go expenditures. The Higher Retail scenario produces slightly better results because the additional Property Tax generated from the increased retail square footage assumed under this scenario.
- The Higher Multifamily and Slower Growth scenarios generate less debt service payments than the other three scenarios. However, the main revenue source to this Fund is Property Tax, and these three scenarios generate lower amounts of Property Tax relative to debt service payments, compared to the other three scenarios. This is because the market values for multifamily units is lower than that of single family units and the Slower Growth scenario only assumes 75% of the development as assumed under Current Trends.

## B. Annual Results

The charts below show the annual net results for the five scenarios. By showing the results annually, the magnitude, rate of change, and timeline of deficits and revenues can be observed over the 22-year analysis period.



General Debt Fund annual results follow the same general trend for each of the scenarios. As discussed above, the best results occur under the Higher Retail scenario. This scenario generates a net deficit in the range of \$6.94 million in 2020. This is followed by Higher Employment, with a net deficit of \$6.98 million in 2020, Current Trends (\$7.02 million), Higher Multifamily (\$7.23 million) and Slower Growth (\$8.04 million).

As the chart above illustrates, net deficits are incurred from the beginning of the 22-year analysis period. Major capital expenditures include the Justice Center, expansion of the

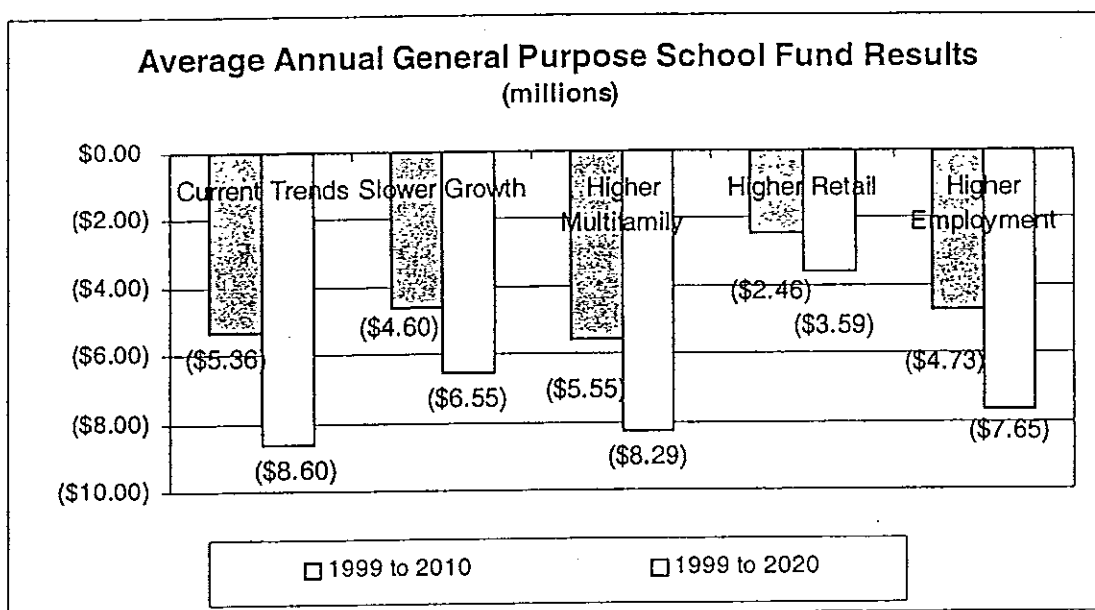
Detention Center, roads, libraries and health facilities. Several capital expenditures, such as the Justice Center and most road projects are required regardless of scenario. Other expenditures, such as for libraries and the Detention Center are directly related to facility capacity and the marginal impact each scenario has on that unused capacity. The reason the fiscal results improve in the two years is because the debt service for capital projects constructed in the earlier years of the analysis ends.

## VIII. GENERAL PURPOSE SCHOOL FUND

The County uses the General Purpose School Fund to account for the *operations* of the Knox County School System. Capital expenditures for the School System are accounted for in the School Construction Fund. As is the case with the General Fund, the fiscal impacts are discussed in terms of average annual and annual net results. The average annual net results are discussed first because it provides a good way of comparing multiple scenarios. All results are those from new growth within the existing County, and exclude costs and revenues from the existing County population and employment base.

### A. Average Annual Results

The chart below summarizes the average annual net fiscal results (revenues minus operating expenditures) to the General Purpose School Fund. The results are shown for two time periods: 1) 1999 to 2010, and 2) 1999 to 2020. The net results for all five scenarios are shown and include operating expenses and revenues as defined in the separate Level of Service document.



As the chart above indicates, all scenarios generate net deficits to the General Purpose School Fund in both time periods. Over the short-term (1999 to 2010), the Higher Retail scenario generates the smallest net deficit, approximately \$2.46 million. The Slower Growth scenario generates the second best result, average annual net deficits of \$4.60 million. This is followed by Higher Employment (\$4.73 million), Current Trends (\$5.36 million) and Higher Multifamily (\$5.55 million).

Over the 22-year analysis period, the Higher Retail scenario again generates the smallest net deficit, approximately \$3.59 million. This is followed by Slower Growth (\$6.55 million), Higher Employment (\$7.65 million), Higher Multifamily (\$8.29 million) and Current Trends (\$8.60).

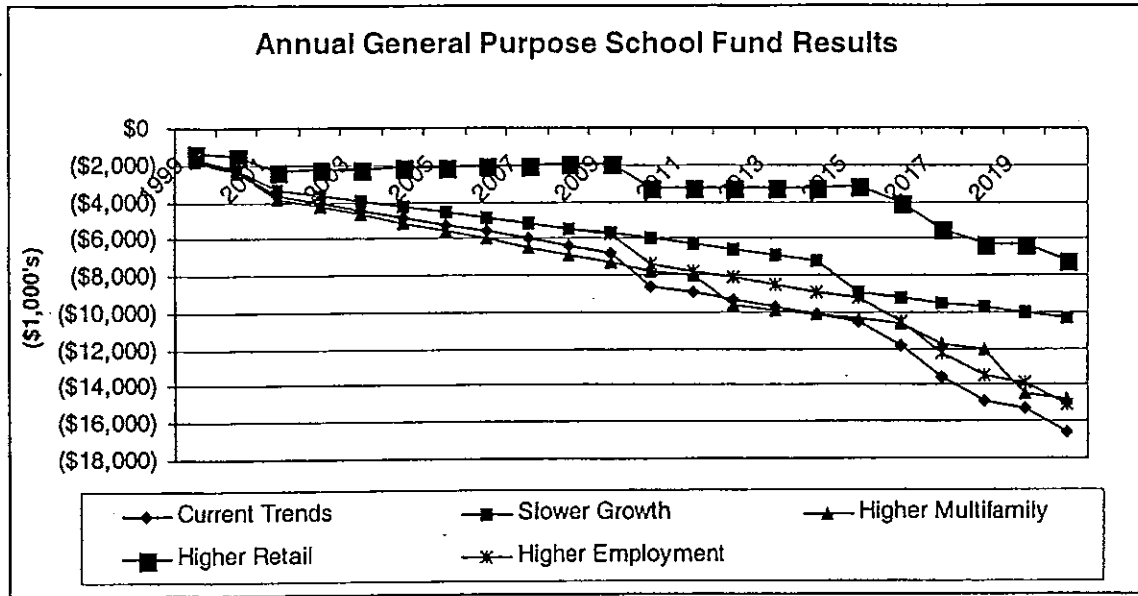
Major reasons for these results are summarized below.

- The Higher Retail scenario generates the best result, although still negative, because Local Option Sales Tax is the largest source of revenue to the General Purpose School Fund. Because Local Option Sales Tax is distributed using a point-sale formula (situs-based), this scenario generates a significantly higher amount of Local Option Sales Tax as a result of having an additional 1.5 million square feet of retail space.
- The Slower Growth scenario generates the second best result because this scenario generates the fewest number of new public school students. This is a direct result of having the lowest increase in population and housing units.
- Although the Higher Employment and Current Trends scenarios generate the same number of public school students, the Higher Employment scenario generates the better result because of the increased Property and Local Option Sales Tax that results from the additional nonresidential square footage assumed in this scenario.
- The Higher Multifamily scenario generates a better result than Current Trends because higher density, multifamily housing units generate fewer public school students than lower density, single family-detached housing units.
- The Current Trends scenario generates the same number of public school students as the Higher Retail and Higher Employment scenarios. However, since Current Trends does not benefit from the increased revenues as a result of additional nonresidential square footage, this scenario generates the highest average annual deficit.

## **B. Annual Results**

The charts below show the annual net results for the five scenarios. By showing the results annually, the magnitude, rate of change, and timeline of deficits and revenues can be observed over the 22-year analysis period.





General Purpose School Fund annual net results follow the same general trend for each of the scenarios. The best results occur under the Higher Retail scenario. This scenario generates a net deficit in the range of \$7.2 million in 2020. This is followed by Slower Growth, with a net deficit of \$10.3 million in 2020, Higher Multifamily (\$14.7 million) Higher Employment (\$15.0 million) and Current Trends (\$16.5 million).

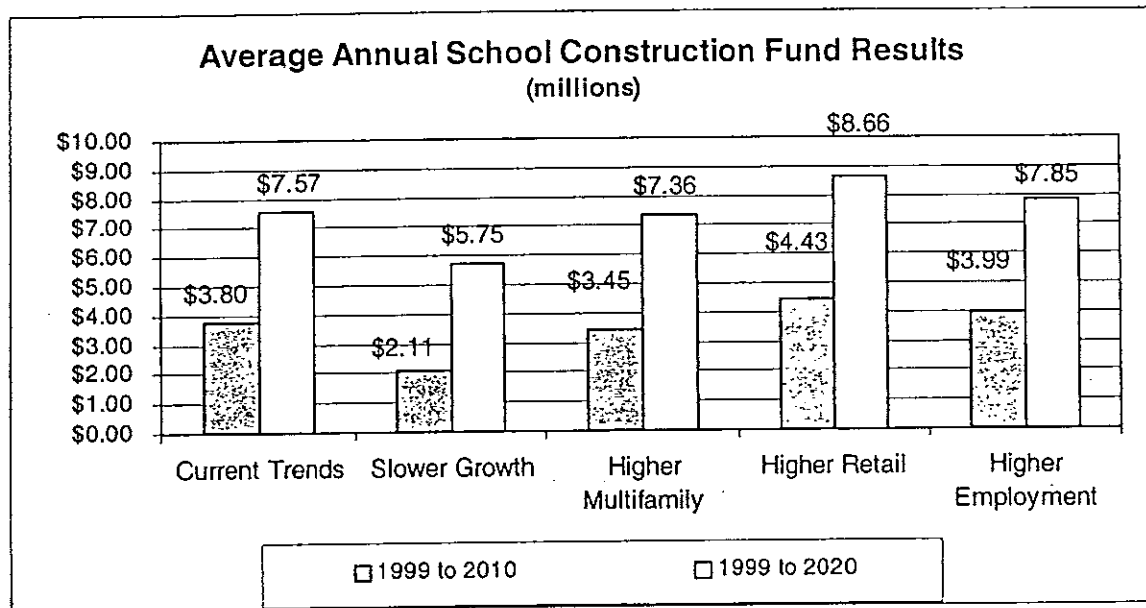
Net deficits are incurred from the beginning of the analysis period, as revenues are not enough to cover the operating costs incurred with the opening of West Valley Middle School and the Bearden High School expansion. Annual results for all scenarios with the exception of Higher Retail continue a declining trend throughout the remaining years of the analysis period as additional schools are opened to serve new growth. After the opening of the initial growth-related schools, the annual results for the Higher Retail scenario follow a much more stable trend as a result of the increased Local Option Sales Tax revenue.

## IX. SCHOOL CONSTRUCTION FUND

The County uses the School Construction Fund to account for the Board of Education Capital Improvement Program. As is the case with the General Fund, the fiscal impacts are discussed in terms of average annual and annual net results. The average annual net results are discussed first because it provides a good way of comparing multiple scenarios. All results are those from new growth within the existing County, and exclude costs and revenues from the existing County population and employment base.

### A. Average Annual Results

The chart below summarizes the average annual net fiscal results (revenues minus operating expenditures) to the General Purpose School Fund. The results are shown for two time periods: 1) 1999 to 2010, and 2) 1999 to 2020. The net results for all five scenarios are shown and include operating expenses and revenues as defined in the separate Level of Service document.



The number of public school students for each scenario is a function of the school capacities and pupil generation rates by type of housing unit. As the chart above indicates, because of the existing excess capacities in the Knox County School System, all scenarios generate net revenues to the School Construction Fund in both time periods. Over the short-term (1999 to 2010), the Higher Retail scenario generates the smallest net revenues, approximately \$4.43 million. The Higher Employment scenario generates the second best result, average annual net revenues of \$3.99 million. This is followed by Current Trends (\$3.80 million), Higher Multifamily (\$3.45 million) and Slower Growth (\$2.11 million).

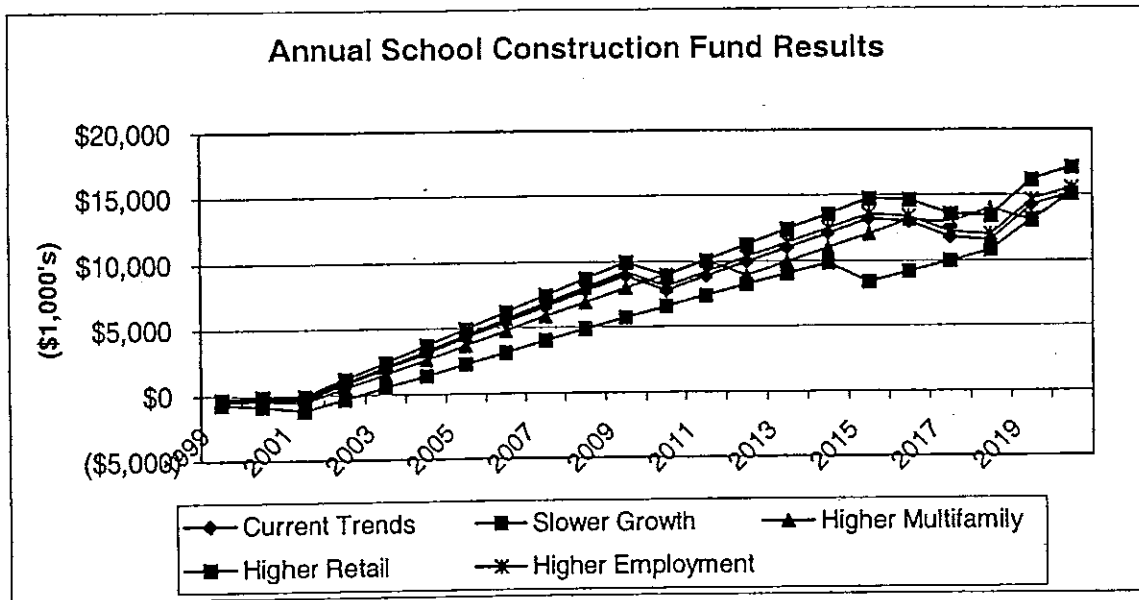
Over the 22-year analysis period, the Higher Retail scenario again generates the best result, approximately \$8.66 million. This is followed by Higher Employment (\$7.85 million), Current Trends (\$7.57 million), Higher Multifamily (\$7.36 million) and Slower Growth (\$5.75).

Major reasons for these results are summarized below.

- When enrollment is compared to capacity in the Knox County School System, elementary schools are operating at 78% utilization; middle schools at 91% and high schools at 73%. This unused capacity is enhanced further by the construction of the Northwest Elementary School, West Valley Middle School and Bearden High School expansions in the first three years of the analysis periods. As a result, only five additional schools are required from 2002 to 2020 under Current Trends (assuming flexible school boundaries).
- As is the case with the General Purpose School Fund, the Higher Retail scenario generates the best result because Local Option Sales Tax is the primary source of funding for the School Construction Fund. Because Local Option Sales Tax is distributed using a point-sale formula, this scenario generates a significantly higher amount of Local Option Sales Tax as a result of having an additional 1.5 million square feet of retail space.
- Although the Higher Employment and Current Trends scenarios generate the same number of public school students, the Higher Employment scenario generates the better result because of the increased Property and Local Option Sales Tax that results from the additional nonresidential square footage assumed in this scenario.
- The Current Trends scenario generates the same number of public school students as Higher Retail and Higher Employment. However, since Current Trends does not benefit from the revenues associated with additional nonresidential square footage (i.e. Local Option Sales Tax and Property Tax), this scenario generates the highest average annual deficit.
- The average annual net revenues generated by the Higher Multifamily scenario is less than Current Trends primarily because Higher Multifamily does not generate as much in Local Option Sales Tax. The amount of retail square footage is less because retail space generally follows rooftops.
- The Slower Growth scenario generates the poorest result even though this scenario generates the need for the fewest number of growth-related schools (4). This is because of the lower amounts of Property and Local Option Sales Tax generated from the reduced amount of development.

## **B. Annual Results**

The charts below show the annual net results for the five scenarios. By showing the results annually, the magnitude, rate of change, and timeline of deficits and revenues can be observed over the 22-year analysis period.



School Construction Fund annual net results follow the same general trend for each of the scenarios. The best results occur under the Higher Retail scenario. This scenario generates net revenues in the range of \$17 million in 2020. This is followed by Higher Employment, with net revenues of \$15.5 million in 2020, Higher Multifamily (\$15.17 million) Current Trends (\$15.1 million) and Slower Growth (\$15.0 million).

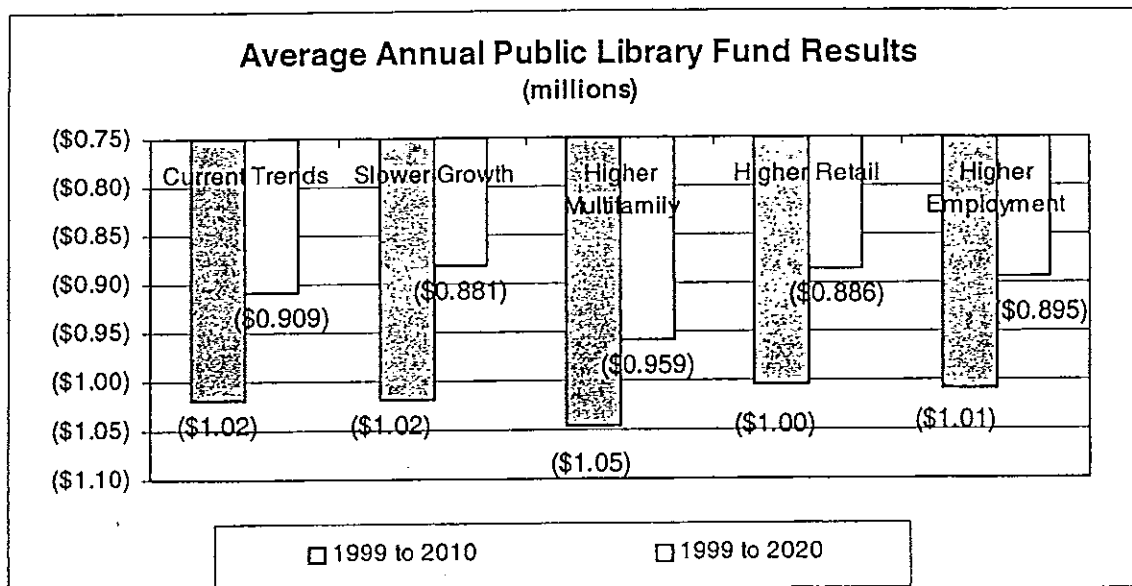
Net deficits are incurred from the beginning of the analysis period, as revenues are not enough to cover the debt service payments incurred with the opening of West Valley Middle School and the Bearden High School expansion. Annual revenues begin accruing shortly after the initial school construction, and continue an increasing trend until the middle of the analysis period, when dips occur as additional growth-related schools are constructed. Annual revenues begin an increasing trend again until the last few years of the analysis period, when dips occur again as the result of additional growth-related school construction.

## X. PUBLIC LIBRARY FUND FISCAL IMPACT RESULTS

The County uses the Public Library Fund to account for the *operations* of the Knox County Library System. Capital expenditures for the Library System are accounted for in the General Debt Fund. As is the case with the General Fund, the fiscal impacts are discussed in terms of average annual and annual net results. The average annual net results are discussed first because it provides a good way of comparing multiple scenarios. All results are those from new growth within the existing County, and exclude costs and revenues from the existing County population and employment base.

### A. Average Annual Results

The chart below summarizes the average annual net fiscal results (revenues minus operating expenditures) to the Public Library Fund. The results are shown for two time periods: 1) 1999 to 2010, and 2) 1999 to 2020. The net results for all five scenarios are shown and include operating expenses and revenues as defined in the separate Level of Service document.



As the chart above indicates, all scenarios generate net deficits to the Public Library Fund in both time periods. Over the short-term (1999 to 2010), the average annual results are quite similar for all five scenarios. The Higher Retail scenario produces the best result, average annual net deficits of approximately \$1.0 million. This is followed by Higher Employment (\$1.01 million), Current Trends and Slower Growth (\$1.02 each) and Higher Multifamily (\$1.05 million).

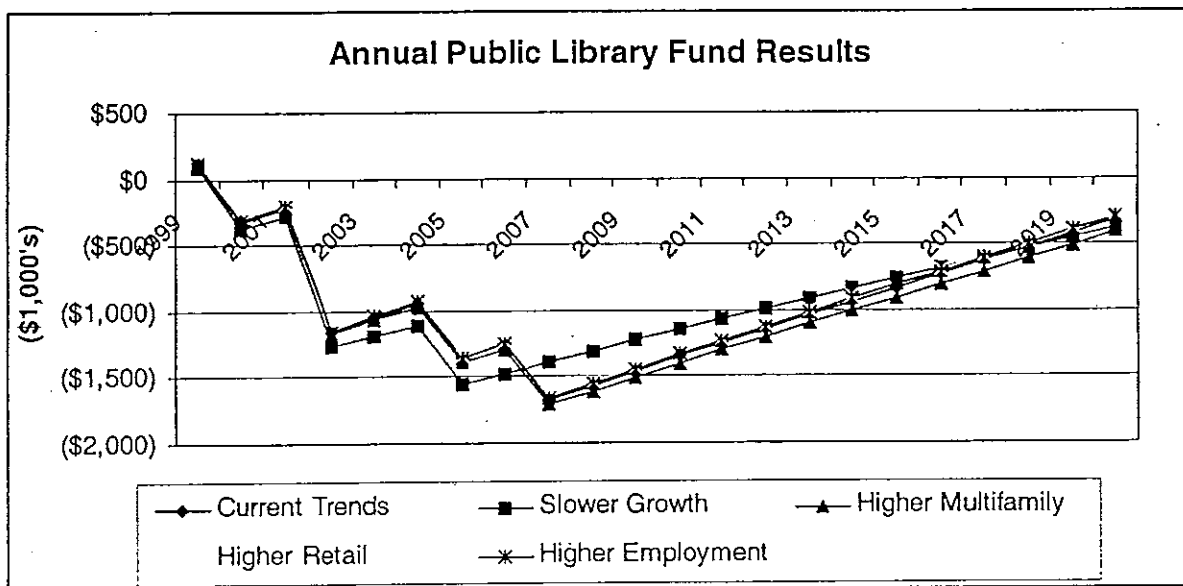
All scenarios generate average annual net deficits over the 22-year analysis period as well. The Slower Growth generates the best result, average annual net deficits of \$881,000. This is followed by Higher Retail and Higher Employment, which both generate net deficits of \$886,000 and \$895,000, respectively, Current Trends (\$909,000) and Higher Multifamily (\$959,000).

Major reasons for these results are summarized below.

- Because of its lower population increase, the Slower Growth scenario generates the need for the least amount of the growth-related Library space. Therefore this scenario generates the best result.
- The Current Trends, Higher Retail and Higher Employment scenarios generate demand for the same amount of growth-related Library space, since the same population increase is assumed under each of these scenarios. As a result of the additional property tax revenue generated by the increased nonresidential square footage assumed under Higher Retail and Higher Employment, the average annual results are better under these two scenarios.
- Although the Higher Multifamily scenario generates the second lowest demand for growth-related Library space, this scenario generates the poorest result. This is because Property Tax is the primary revenue source to this Fund. Even though this scenario assumes the same number of housing units as Current Trends, multifamily units have a lower market value than single family units, resulting in less Property Tax revenue.

#### B. Annual Results

The charts below show the annual net results for the five scenarios. By showing the results annually, the magnitude, rate of change, and timeline of deficits and revenues can be observed over the 22-year analysis period.



Public Library Fund annual results follow the same general trend for each of the scenarios. The best results occur under the Higher Retail scenario. This scenario generates a net deficit in the range of \$270,000 in 2020. This is followed by Higher Employment, with a net deficit

of \$291,000 in 2020, Current Trends (\$314,000) Slower Growth (\$368,000) and Higher Multifamily (\$407,000).

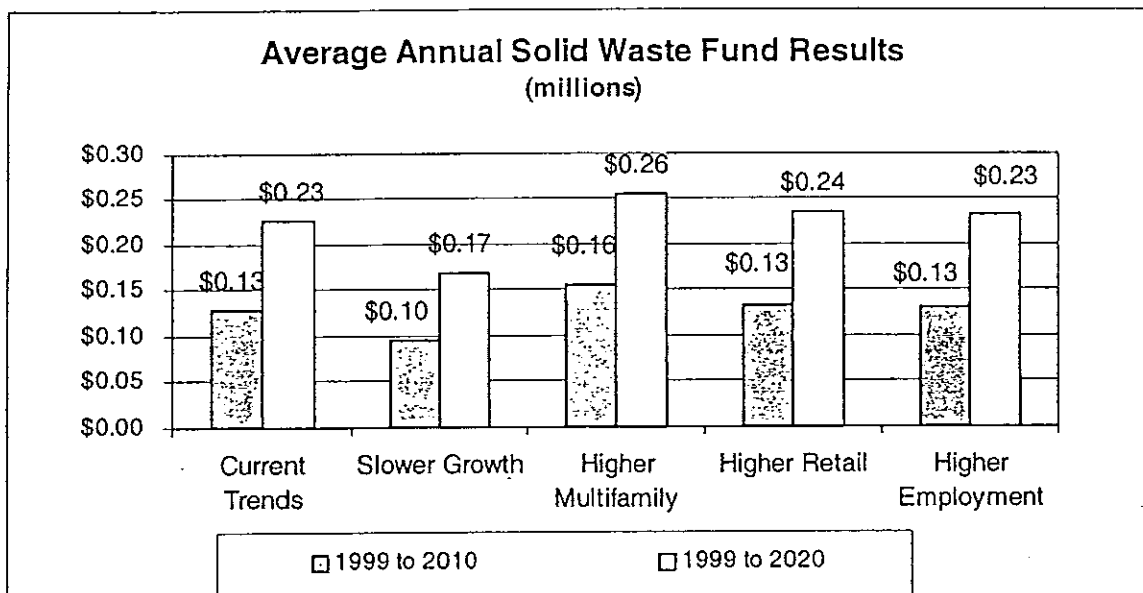
Net revenues occur the first year of the 22-year analysis period. Beginning in 2000, net deficits are incurred, as revenues are not enough to cover the operating costs associated with the opening of the West Knoxville Branch Library. Net deficits continue to increase until 2008, when the last growth-related Library is opened to serve new growth. The exaggerated spikes illustrate the impact of these growth-related Library openings. Annual net deficits follow a steady decreasing trend until 2020.

## XI. SOLID WASTE FUND FISCAL IMPACT RESULTS

The County uses the Solid Waste Fund to account for all solid waste and recycling activities provided by Knox County. Capital expenditures for Solid Waste are accounted for in the General Debt Fund. As is the case with the General Fund, the fiscal impacts are discussed in terms of average annual and annual net results. The average annual net results are discussed first because it provides a good way of comparing multiple scenarios. All results are those from new growth within the existing County, and exclude costs and revenues from the existing County population and employment base.

### A. Average Annual Results

The chart below summarizes the average annual net fiscal results (revenues minus operating expenditures) to the Solid Waste Fund. The results are shown for two time periods: 1) 1999 to 2010, and 2) 1999 to 2020. The net results for all five scenarios are shown and include operating expenses and revenues as defined in the separate Level of Service document.



As the chart above indicates, all scenarios generate net revenues to the Solid Waste Fund in both time periods. Over the short-term (1999 to 2010), the average annual results are quite similar for all five scenarios. The Higher Multifamily scenario produces the best result, average annual net revenues of approximately \$160,000. This is followed by Current Trends, Higher Retail and Higher Employment (\$130,000). The Slower Growth scenario generates the smallest average annual net revenues, approximately \$100,000.

Over the 22-year analysis period, Higher Multifamily scenario generates the best result again, average annual net revenues of \$260,000. This is followed by Higher Retail (\$240,000), Higher Employment (\$230,000), Current Trends (\$230,000) and Slower Growth (\$170,000).

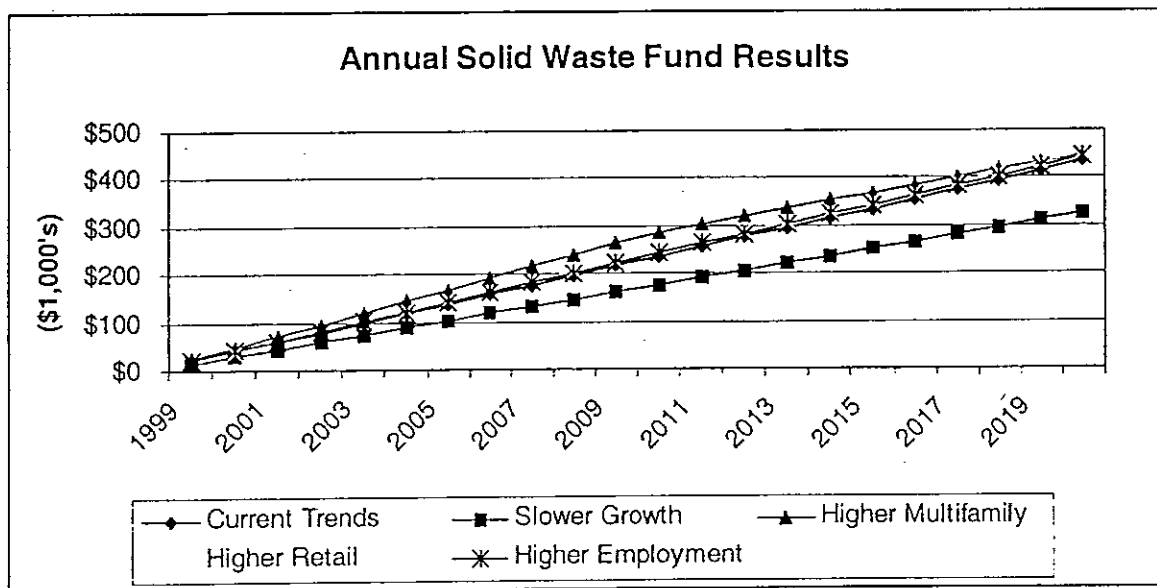


Major reasons for these results are summarized below.

- The Higher Multifamily scenario produces the best result because the impact of having the second lowest cost as a result of having the second lowest population increase is more than the impact of generating the fourth lowest amount revenues.
- Since population is the driver of Solid Waste costs, the Current Trends, Higher Retail and Higher Employment scenarios generate the same costs, since the same population increase is assumed under each of these scenarios. As a result of the additional property tax revenue generated by the increased nonresidential square footage assumed under Higher Retail and Higher Employment, the average annual results are better under these two scenarios.
- Although the Slower Growth scenario generates the lowest Solid Waste costs, this scenario generates the poorest result. This is because Property Tax is the primary revenue source to this Fund.

#### B. Annual Results

The charts below show the annual net results for the five scenarios. By showing the results annually, the magnitude, rate of change, and timeline of deficits and revenues can be observed over the 22-year analysis period.



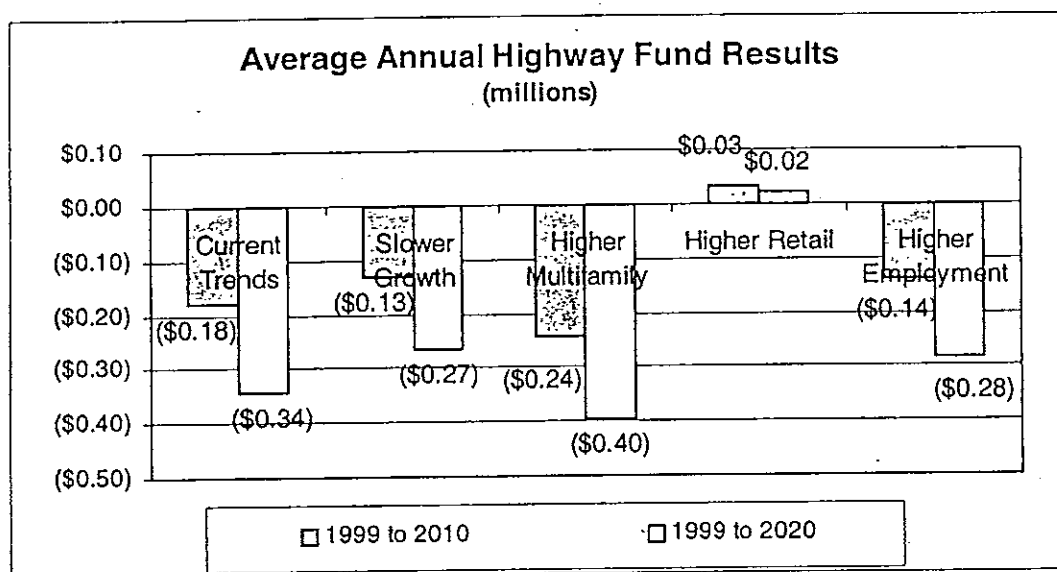
As the chart above indicates, net revenues occur in every year of the 22-year analysis period. Solid Waste Fund annual results follow the same general trend for each of the scenarios. The best results occur under the Higher Retail scenario. This scenario generates net revenues in the range of \$452,000 in 2020. This is followed by Higher Multifamily, with net revenues of \$449,000 in 2020, Higher Employment (\$444,000), Current Trends (\$435,000) and Slower Growth (\$326,000).

## XII. HIGHWAY FUND FISCAL IMPACT RESULTS

The County uses the Highway Fund to account for the County's share of the State gasoline and motor fuel taxes that are utilized to maintain non-state roads within Knox County. Capital expenditures for Roads are accounted for in the General Debt Fund. As is the case with the General Fund, the fiscal impacts are discussed in terms of average annual and annual net results. The average annual net results are discussed first because it provides a good way of comparing multiple scenarios. All results are those from new growth within the existing County, and exclude costs and revenues from the existing County population and employment base.

### A. Average Annual Results

The chart below summarizes the average annual net fiscal results (revenues minus operating expenditures) to the Highway Fund. The results are shown for two time periods: 1) 1999 to 2010, and 2) 1999 to 2020. The net results for all five scenarios are shown and include operating expenses and revenues as defined in the separate Level of Service document.



As the chart above indicates, only the Higher Retail scenario generates average annual net revenues. Over the short-term (1999 to 2010), the average annual net revenues for this scenario are \$30,000. The remaining scenarios generate net deficits, with Slower Growth generating the smallest deficits, approximately \$130,000. This is followed by Higher Employment (\$140,000), Current Trends (\$180,000) and Higher Multifamily (\$240,000).

Over the 22-year analysis period, the Higher Retail scenario is the only scenario that generates average annual net revenues, approximately \$20,000. The remaining scenarios generate average annual net deficits, with Slower Growth generating the smallest deficit, approximately \$270,000. This is followed by Higher Multifamily (\$240,000), Higher Employment (\$280,000) and Current Trends (\$340,000).

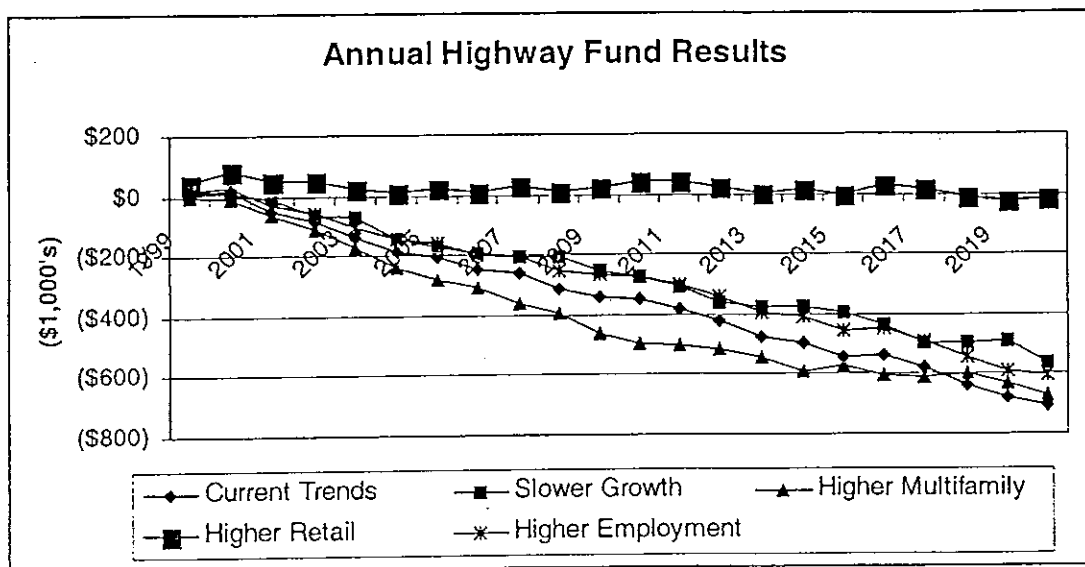
Major reasons for these results are summarized below.

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- The results for the Higher Retail, Higher Employment and Current Trends scenarios highlight the importance of Local Option Sales Tax to the Highway Fund, as these three scenarios generate the same amount of road mileage for the County to maintain. Because Local Option Sales Tax is distributed in the State of Tennessee using a situs-based (point-of-sale) formula, the Higher Retail scenario produces the result, since this scenario assumes an additional 1.5 million square feet of retail space over Current Trends, which generates an additional \$8 million in Local Option Sales Tax. The Higher Employment scenario assumes an additional 695 retail employees, which means an additional 208,500 square feet of retail space from which Local Option Sales Tax is generated.
- Because it generates the lowest amount of local (i.e. subdivision) road mileage for the County to maintain, the Slower Growth scenario generates the second best result.
- The Higher Multifamily scenario generates the second lowest amount of road costs and similar amount of Local Option Sales Tax as Current Trends. However, this scenario generates approximately 10,000 fewer people than Current Trends because of the smaller household size of multifamily units. Since the other two primary revenue sources (Statutory and State revenues) to the Highway Fund are based on population, this scenario generates the poorest result.

## B. Annual Results

The charts below show the annual net results for the five scenarios. By showing the results annually, the magnitude, rate of change, and timeline of deficits and revenues can be observed over the 22-year analysis period.



With the exception of the Higher Retail scenario, annual results for the Highway Fund follow the same general trend for each of the scenarios. The best results occur under the Higher Retail scenario. This scenario generates a net deficit in the range of \$17,000 in 2020. This is

followed by Slower Growth, with a net deficit of \$563,000 in 2020, Higher Employment (\$607,000), Higher Multifamily (\$672,000) and Current Trends (\$703,000).

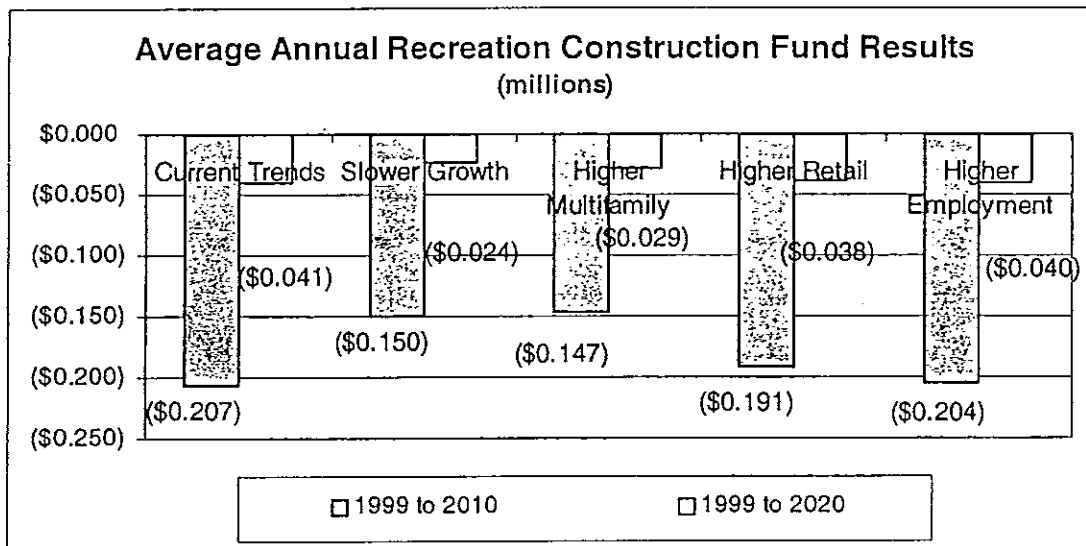
The annual results for the Higher Retail scenario illustrate the impact of Local Option Sales Tax on Knox County Government operations. Because of the situs-based (point-of-sale) nature of Local Option Sales Tax, this scenario generates much better annual results.

### XIII. RECREATION CONSTRUCTION FUND FISCAL IMPACT RESULTS

The County uses the Recreation Construction Fund to account for Parks and Recreation capital expenditures. Operating expenditures are accounted for in the General Fund. As is the case with the General Fund, the fiscal impacts are discussed in terms of average annual and annual net results. The average annual net results are discussed first because it provides a good way of comparing multiple scenarios. All results are those from new growth within the existing County, and exclude costs and revenues from the existing County population and employment base.

#### A. Average Annual Results

The chart below summarizes the average annual net fiscal results (revenues minus operating expenditures) to the Recreation Construction Fund. The results are shown for two time periods: 1) 1999 to 2010, and 2) 1999 to 2020. The net results for all five scenarios are shown and include operating expenses and revenues as defined in the separate Level of Service document.



As the chart above indicates, all scenarios generate average annual net deficits. Over the short-term (1999 to 2010), both the Higher Multifamily and Slower Growth scenarios generate the smallest average annual net deficits, \$147,000 and 150,000, respectively. This is followed by Higher Retail (\$191,000), Higher Employment (\$204,000) and Current Trends (\$207,000).

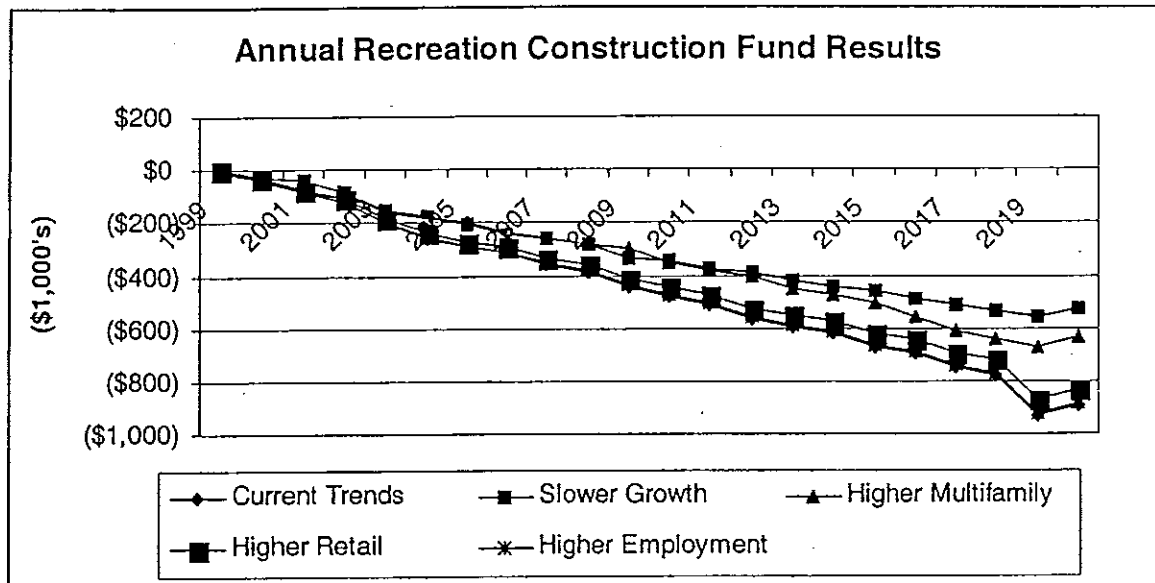
Over the 22-year analysis period, the Slower Growth scenario generates a slightly better result than Higher Multifamily, net deficits of \$24,000 versus \$29,000. The Higher Retail, Higher Employment and Current Trends scenarios all generate similar results over the 22-year analysis period, average annual net deficits of \$38,000, \$40,000 and \$41,000, respectively. This is because all three scenarios essentially have the same net increase in population over the 22 years.

Major reasons for these results are summarized below.

- Because the Slower Growth and Higher Multifamily scenarios generate the least demand for new parks and related facilities, these scenarios produce the smallest deficits.
- The Higher Retail, Higher Employment and Current Trends scenarios generate the same demand for parks and related facilities. Because Local Option Sales Tax is the only source of revenue to the Recreation Construction Fund, the Higher Retail and Higher Employment scenarios generate better results than Current Trends because of the increased retail square footage assumed under these scenarios.

### B. Annual Result

The charts below show the annual net results for the five scenarios. By showing the results annually, the magnitude, rate of change, and timeline of deficits and revenues can be observed over the 22-year analysis period.



Recreation Fund annual results follow the same general trend for each of the scenarios. The best results occur under the Slower Growth scenario. This scenario generates a net deficit in the range of \$525,000 in 2020. This is followed by Higher Multifamily, with a net deficit of \$632,000 in 2020, Higher Retail (\$832,000) Higher Employment (\$886,000) and Current Trends (\$895,000).

Net deficits are incurred from the beginning of the analysis period under Current Trends, Higher Retail and Higher Employment. Annual results for all scenarios continue a declining trend throughout most the 22-year analysis period as additional parks and related facilities are opened to serve new growth.

## XIV. APPENDIX

The tables below contain detailed information pertaining to net residential and nonresidential increases for each of the five scenarios.

### CURRENT TRENDS SCENARIO

		Countywide	Unincorporated	City
1990-2000	Pop	366,846	198,992	167,854
	DU	172,095	89,378	82,717
	SFDU	110,379	71,502	38,877
	MFDU	61,716	17,876	43,840
	Emp	214,944	75,968	138,976
	IndEmp	75,202	31,426	43,776
	OffEmp	54,824	12,507	42,317
	RetEmp	31,557	11,781	19,776
2000-2010	OtherEmp	53,361	20,254	33,107
	Pop	418,716	245,580	173,138
	DU	201,186	114,466	86,720
	SFDU	129,000	87,810	41,191
	MFDU	72,186	26,656	45,529
	Emp	237,033	93,671	143,362
	IndEmp	84,030	38,880	45,150
	OffEmp	58,940	15,302	43,638
2010-2020	RetEmp	34,986	14,576	20,410
	OtherEmp	59,077	24,913	34,164
	Pop	457,145	280,922	176,223
	DU	224,227	134,336	89,891
	SFDU	143,748	100,724	43,024
	MFDU	80,479	33,612	46,867
	Emp	253,024	107,101	145,922
	IndEmp	90,487	44,535	45,952
1998-2020	OffEmp	61,832	17,423	44,409
	RetEmp	37,477	16,697	20,780
	OtherEmp	63,228	28,447	34,781
	Pop	90,299	81,930	8,369
	DU	52,132	44,958	7,174
	SFDU	33,368	29,222	4,147
	MFDU	18,764	15,736	3,027
	Emp	38,080	31,133	6,946
NET INCREASE	IndEmp	15,285	13,109	2,176
	OffEmp	7,008	4,916	2,092
	RetEmp	5,920	4,916	1,004
	OtherEmp	9,867	8,193	1,674

## SLOWER GROWTH SCENARIO

		Countywide	Unincorporated	City
1990-1998	Pop	366,846	198,992	167,854
	DU	172,095	89,378	82,717
	SFDU	110,379	71,502	38,877
	MFDU	61,716	17,876	43,840
	Emp	214,944	75,968	138,976
	IndEmp	75,202	31,426	43,776
	OffEmp	54,824	12,507	42,317
	RetEmp	31,557	11,781	19,776
	OtherEmp	53,361	20,254	33,107
2000-2008	Pop	405,750	233,933	171,817
	DU	193,913	108,194	85,719
	SFDU	124,345	83,733	40,612
	MFDU	69,568	24,461	45,107
	Emp	231,511	89,246	142,265
	IndEmp	81,823	37,017	44,806
	OffEmp	57,911	14,603	43,308
	RetEmp	34,129	13,877	20,252
	OtherEmp	57,648	23,748	33,900
2010-2018	Pop	434,570	260,440	174,131
	DU	211,194	123,097	88,098
	SFDU	135,406	93,419	41,987
	MFDU	75,788	29,678	46,111
	Emp	243,504	99,318	144,186
	IndEmp	86,666	41,258	45,408
	OffEmp	60,080	16,194	43,886
	RetEmp	35,997	15,468	20,529
	OtherEmp	60,761	26,399	34,362
1998-2020 NET INCREASE	Pop	67,724	61,448	6,277
	DU	39,099	33,719	5,381
	SFDU	25,026	21,916	3,110
	MFDU	14,073	11,802	2,271
	Emp	28,560	23,350	5,210
	IndEmp	11,464	9,832	1,632
	OffEmp	5,256	3,687	1,569
	RetEmp	4,440	3,687	753
	OtherEmp	7,400	6,145	1,255



## HIGHER MULTIFAMILY SCENARIO

		Countywide	Unincorporated	City
1990-1998	Pop	366,846	198,992	167,854
	DU	172,095	89,378	82,717
	SFDU	110,379	71,502	38,877
	MFDU	61,716	17,876	43,840
	Emp	214,944	75,968	138,976
	IndEmp	75,202	31,426	43,776
	OffEmp	54,824	12,507	42,317
	RetEmp	31,557	11,781	19,776
	OtherEmp	53,361	20,254	33,107
2000-2008	Pop	404,359	231,221	173,138
	DU	201,186	114,466	86,720
	SFDU	126,492	85,301	41,191
	MFDU	74,694	29,165	45,529
	Emp	231,577	88,215	143,362
	IndEmp	81,733	36,583	45,150
	OffEmp	58,079	14,441	43,638
	RetEmp	34,125	13,715	20,410
	OtherEmp	57,641	23,477	34,164
2010-2020	Pop	446,999	270,776	176,223
	DU	224,230	134,339	89,891
	SFDU	139,255	96,231	43,024
	MFDU	84,975	38,108	46,867
	Emp	249,168	103,246	145,922
	IndEmp	88,863	42,911	45,952
	OffEmp	61,223	16,814	44,409
	RetEmp	36,868	16,088	20,780
	OtherEmp	62,213	27,432	34,781
1998-2020 NET INCREASE	Pop	80,153	71,784	8,369
	DU	52,135	44,961	7,174
	SFDU	28,875	24,729	4,147
	MFDU	23,260	20,232	3,027
	Emp	34,224	27,278	6,946
	IndEmp	13,661	11,485	2,176
	OffEmp	6,399	4,307	2,092
	RetEmp	5,311	4,307	1,004
	OtherEmp	8,852	7,178	1,674

## HIGHER RETAIL SCENARIO

		Countywide	Unincorporated	City
1990-2000	Pop	366,846	198,992	167,854
	DU	172,095	89,378	82,717
	SFDU	110,379	71,502	38,877
	MFDU	61,716	17,876	43,840
	Emp	214,944	75,968	138,976
	IndEmp	75,202	31,426	43,776
	OffEmp	54,824	12,507	42,317
	RetEmp	31,557	11,781	19,776
	OtherEmp	53,361	20,254	33,107
2000-2010	Pop	418,716	245,580	173,138
	DU	201,186	114,466	86,720
	SFDU	129,000	87,810	41,191
	MFDU	72,186	26,656	45,529
	Emp	238,465	95,103	143,362
	IndEmp	84,030	38,880	45,150
	OffEmp	58,940	15,302	43,638
	RetEmp	36,418	16,008	20,410
	OtherEmp	59,077	24,913	34,164
2010-2020	Pop	457,145	280,922	176,223
	DU	224,227	134,336	89,891
	SFDU	143,748	100,724	43,024
	MFDU	80,479	33,612	46,867
	Emp	255,524	109,602	145,922
	IndEmp	90,487	44,535	45,952
	OffEmp	61,832	17,423	44,409
	RetEmp	39,977	19,197	20,780
	OtherEmp	63,228	28,447	34,781
1998-2020 NET INCREASE	Pop	90,299	81,930	8,369
	DU	52,132	44,958	7,174
	SFDU	33,368	29,222	4,147
	MFDU	18,764	15,736	3,027
	Emp	40,580	33,634	6,946
	IndEmp	15,285	13,109	2,176
	OffEmp	7,008	4,916	2,092
	RetEmp	8,420	7,416	1,004
	OtherEmp	9,867	8,193	1,674

## HIGHER EMPLOYMENT SCENARIO

		Countywide	Unincorporated	City
1990	Pop	366,846	198,992	167,854
	DU	172,095	89,378	82,717
	SFDU	110,379	71,502	38,877
	MFDU	61,716	17,876	43,840
	Emp	214,944	75,968	138,976
	IndEmp	75,202	31,426	43,776
	OffEmp	54,824	12,507	42,317
	RetEmp	31,557	11,781	19,776
	OtherEmp	53,361	20,254	33,107
2010	Pop	418,716	245,580	173,138
	DU	201,186	114,466	86,720
	SFDU	129,000	87,810	41,191
	MFDU	72,186	26,656	45,529
	Emp	240,752	97,390	143,362
	IndEmp	85,451	40,301	45,150
	OffEmp	59,714	16,076	43,638
	RetEmp	35,541	15,131	20,410
	OtherEmp	60,046	25,883	34,164
2020	Pop	457,145	280,922	176,223
	DU	224,227	134,336	89,891
	SFDU	143,748	100,724	43,024
	MFDU	80,479	33,612	46,867
	Emp	257,865	111,943	145,922
	IndEmp	92,275	46,323	45,952
	OffEmp	62,887	18,478	44,409
	RetEmp	38,172	17,392	20,780
	OtherEmp	64,531	29,750	34,781
1998-2020 NET INCREASE	Pop	90,299	81,930	8,369
	DU	52,132	44,958	7,174
	SFDU	33,368	29,222	4,147
	MFDU	18,764	15,736	3,027
	Emp	42,921	35,975	6,946
	IndEmp	17,073	14,897	2,176
	OffEmp	8,063	5,971	2,092
	RetEmp	6,615	5,611	1,004
	OtherEmp	11,170	9,496	1,674

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