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**MEMORANDUM**

**To:** Kathy Hamilton, Finance Director  
Knox County, Tennessee

**From:** L. Carson Bise, II, AICP  
Tischler & Associates, Inc. (TA)

**Subject:** Draft Level of Service, Cost & Revenue Factor Document

**Date:** February 18, 1999

Attached is a draft of the Level of Service, Cost & Revenue Factor document for the fiscal impact analysis TA is conducting for the County. As we discussed, this document is being issued prematurely in order to expedite the review process. The following data gaps exist at this time:

- We have not been able to obtain the appropriate taxable value information for *new* development prototypes. Perhaps this is something MPC has a better handle on? There are several options we can pursue.
- TA is working with Cindy Pionke from Engineering on Road capital costs. This information should be formalized this week.
- Related to Roads, the information from Engineering does not show the length of proposed road segments, which is needed to estimate the operating impact. TA is told that MPC may have this information. We will pursue with MPC.
- Further discussion is needed regarding Health Clinics. I am told the County only owns two of the five clinics. Assumptions need to be made regarding future space (i.e. does the County vacate leased space to construct a bigger facility?).
- You are providing information pertaining to the Justice Center capital and operating costs.
- Related to that, I would like to discuss Corrections facilities with you.

I am confident the missing information can be culled together rather quickly. In the meantime, I suggest appropriate departments begin reviewing information pertaining to their realm of responsibility.

Please call with any questions.

Fiscal Impact Analysis

•  
Capital Facility Analysis

•  
Impact Fee Systems

•  
Growth Policy Planning

•  
Economic and Market Analysis

MUNIES, FISCALS & CRIM  
Fiscal impact systems tailored  
for each community

*Draft*  
Level of Service, Cost & Revenue  
Assumptions for  
Fiscal Impact Analysis  
of  
Five Growth Scenarios

Prepared For  
Knox County, Tennessee

February 18, 1999

Prepared By:

Tischler & Associates, Inc.  
Bethesda, Maryland  
Pasadena, California

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**I. OVERALL METHODOLOGY AND MAJOR ASSUMPTIONS**

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. This Service Level, Cost and Revenue Factors document discusses County services and facilities that will be impacted by new development. These service level, cost and revenue factors are based on TA's on-site interviews with County staff and project management team. The final assumptions will be utilized with demographic projections to calculate the fiscal impact on the Knox County budget for the 21-year period between 1999 and 2020. Calculations will be performed using TA's FISCALS software designed exclusively for Knox County.

**A. The FISCALS Process and Data Input Categories**

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 industrial space. 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. These estimates are based on data provided by the Knoxville/Knox County Metropolitan Planning Commission (MPC).

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 Knox County personnel.

This data will be used by TA's FISCALS system to calculate the annual costs, revenues, and capital facilities by department or function, where appropriate. These assumptions are outlined in this report.

**B. Major Assumptions**

This fiscal impact analysis can be regarded as a snapshot of the current budget. The Fiscal Year 1999 Budget has been used to represent a "snapshot" of the County's current costs, revenues and levels of service. In summary, the "snapshot" approach does not attempt to speculate about how services, costs, revenues and other factors will change over 21 years. Instead, it evaluates the fiscal impact to the County as it currently conducts business under the present budget.

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

Fiscal Impact Analysis



Capital Facility Analysis



Impact Fee Systems



Growth Policy Planning



Economic and Market Analysis

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Fiscal impact systems tailored  
for each community

**1. *Marginal, Growth-Related Costs and Revenues***

For this analysis, costs and revenues that are directly attributable to new development are included. Some costs are not expected to be impacted by demographic changes, and may be fixed in this analysis, such as some administrative functions. In this analysis, most of the costs are driven by new residents and new jobs.

**2. *Level of Service***

The cost projections are based on the "snapshot approach" in which it is assumed the current level of spending, as provided in the Fiscal Year 1999 budget, will continue through the 21-year analysis period. The current level of spending is referred to as the current level of service (LOS) in this type of analysis.

**3. *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.

**4. *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.

**5. *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.

**C. *General Methodology***

Annual costs and revenues attributable to new development will be projected by applying the applicable cost and revenue factors, as outlined in this LOS memorandum, to new development. In general, six different methodologies are used. In some cases, a unique methodology must be used. These methodologies, along with accompanying examples, are described below.

**1. *Per Capita***

Many of the factors described in this LOS memorandum use a per capita approach. If a cost or revenue is assumed to be allocated on a per capita basis, the budget is divided by the current population estimate to arrive at the current level of service standard.

For example, the County Election Commission budget totals \$957,755 in FY99. Of that amount, \$582,096 (61%) is considered variable expenditures. This amount is divided by the current population estimate of 365,626, for a per capita cost of \$1.59.

**2. Per Capita and Employee**

Some factors described in the LOS memorandum use a per capita and employee approach. If a cost or revenue is assumed to be allocated on a per capita and employee basis, it is divided by the current population and employment estimate to arrive at the current level of service standard.

For example, the Environmental Health budget totals \$979,078 in FY99. Of this amount, \$749,947 (76%) is considered variable expenditures. This amount is divided by the current population and employment estimate of 580,570, for a per capita and employee cost of \$1.29.

**3. Per Trip**

As detailed Sheriff calls for service information is not available for nonresidential land uses, a per trip approach is used to allocate the nonresidential portion of the Sheriff's budget. Trip generation rates were obtained from the reference book, Trip Generation, published by the Institute of Transportation Engineers (6<sup>th</sup> Edition, 1997). To translate the trip generation factors into associated operating costs per 1,000 square feet of nonresidential space, the trip generation factors are multiplied by the cost per trip in Knox County. Non-residential costs are calculated per 1,000 square feet and are then converted to employees using employment per square feet factors developed by the Urban Land Institute.

**4. Per Unit**

Some factors described in the LOS memorandum utilize a per unit approach. If a cost or revenue is assumed to be allocated on a per capita and employee basis, it is divided by the current housing unit estimate to arrive at the current level of service standard.

For example, Cable TV Franchise revenues total \$675,000 in FY99. This amount is divided by the current housing unit estimate of 169,524 for a per unit revenue of \$3.98.

**5. Per Square Foot**

Local Option Sales Tax is calculated on a square foot basis, using the current estimate of retail space in the County. For example, it is estimated that there is 4,712,224 square feet of retail space in the unincorporated County. When this is compared to the FY99 General Fund Local Option Sales Tax revenue of \$9,027,500, \$1.92 of Local Option Sales Tax is generated per square foot of retail space.

**6. Marginal Calculations**

a. Variable

Wherever possible a marginal approach was utilized. An example of a variable marginal revenue approach is the calculation of property tax. The assessment rate of 25% will be applied against the average new market values (discussed in the Revenues section) and will then be multiplied times the tax rate of \$1.038.

b. Direct Entered

An example of a direct entered marginal approach for costs is Elementary School non-classroom staff costs. As additional elementary schools are opened in the County to serve



new growth, the annual non-classroom staffing cost of \$686,642 will be direct entered into the FISCALS model.

#### D. Current Conditions and Factors

The table below summarizes the current 1998 residential and nonresidential conditions in Knox County. The table includes population, dwelling units for four residential categories, employment for four nonresidential categories, and square footage for three nonresidential categories.

##### 1998 Demographic Profile Knox County, Tennessee

Category	City of Knoxville	%	Unincorp. County Knox County	%	Countywide Total	%	% in Unincorp. County
Population*	167,854	100%	197,772	100%	365,626	100%	54%
<i>Housing Units*</i>							
Single Family	38,742	47%	70,084	80%	108,826	64%	64%
Multifamily	32,705	40%	8,786	10%	41,491	24%	21%
Condominium	6,969	9%	2,920	3%	9,889	6%	30%
Mobile Home	3,560	4%	5,758	7%	9,318	5%	62%
<b>Total</b>	<b>81,976</b>	<b>100%</b>	<b>87,548</b>	<b>100%</b>	<b>169,524</b>	<b>100%</b>	<b>52%</b>
<i>Full-Time Equivalent Employment**</i>							
Retail	19,776	14%	11,781	16%	31,557	15%	37%
Office	42,317	30%	12,507	16%	54,824	26%	23%
Industrial/Flex	43,776	31%	31,426	41%	75,202	35%	42%
Other#	33,107	24%	20,254	27%	53,361	25%	38%
<b>Total</b>	<b>138,976</b>	<b>100%</b>	<b>75,968</b>	<b>100%</b>	<b>214,944</b>	<b>100%</b>	<b>35%</b>
<i>Nonresidential Sq. Ft. (1,000s)***</i>							
Retail	7,911	21%	4,712	22%	12,623	21%	37%
Office	10,579	28%	3,127	15%	13,706	23%	23%
Industrial/Flex	18,955	51%	13,607	63%	32,562	55%	42%
<b>Total</b>	<b>37,445</b>	<b>100%</b>	<b>21,446</b>	<b>100%</b>	<b>58,891</b>	<b>100%</b>	<b>36%</b>

\*Source: Knoxville-Knox County MPC, and U.S. Bureau of the Census

\*\*Source: Claritas, Inc. and Tischler & Associates, Inc.

\*\*\*Source: Knoxville-Knox County MPC

#This category includes agriculture, mining, construction and government

As the table indicates, the 1998 Countywide population is estimated at 365,626. It is estimated that 167,854 persons reside within the City of Knoxville and 197,772 persons reside in the unincorporated County. The 1998 housing unit estimate for Knox County is 169,524. Of the 81,976 housing units located within the City of Knoxville, 38,742 units, or 47% are single family units. Approximately, 49%, or 39,674 units are multifamily or condominiums. There are 87,548 housing units located within the unincorporated County. Approximately 80%, or 70,084 units are single family units and approximately 13%, or 11,706 units are multifamily or condominiums.

Countywide full-time equivalent (FTE) employment is estimated at 214,944. Approximately 139,000 jobs are located in the City of Knoxville and approximately 76,000 jobs (35%) are located within the unincorporated County. Retail employment in Knox County is estimated at

31,557 jobs (15% of total County employment). Of this amount, 19,776 jobs are located within the City of Knoxville and 11,781 jobs are located within the unincorporated County. Office employment in Knox County is estimated at 54,824 jobs (26%), 42,317 within the City of Knoxville and 12,507 within the unincorporated County. Industrial/Flex employment in Knox County is estimated at 75,202 (35%), 43,776 are located within the City of Knoxville and 31,426 are located within the unincorporated County. In addition, employment in categories such as agriculture, local government, etc. is projected to increase by 53,361 (25%) jobs. These jobs are classified together as they do not typically generate taxable nonresidential square footage.

Total nonresidential square footage in Knox County is estimated at approximately 59 million. Approximately 37.5 million square feet is within the City of Knoxville and 21.5 million square feet is located within the unincorporated County. Retail square footage in Knox County is estimated at 12.6 million (21% of total County square footage). Of this amount, 7.9 million square feet is located within the City of Knoxville and 4.7 million square feet is located within the unincorporated County. Office square footage in Knox County is estimated at 13.7 million (23%), 10.5 million within the City of Knoxville and 3.1 million square feet within the unincorporated County. Industrial/Flex square footage in the County is estimated at 32.5 million, approximately 18.9 million square feet located within the City of Knoxville and 13.6 million square feet is located within the unincorporated County.

## **II. SCENARIOS**

Based on existing conditions in Knox County, as well as recent and projected trends, TA and County staff has 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 may be affected by municipal boundaries, as the City of Knoxville has its own Police force.

Five different scenarios were developed, each having a 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 rates of growth continuing. Therefore a Current Trends scenario was developed using the average growth rates from 1990 to 1997. 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 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 jobs to housing ratio increase of approximately 15% in the unincorporated County and a decrease of approximately 35% in the City of Knoxville. That is an increase of 7,200 jobs in the unincorporated County and a decrease of 7,200 jobs in the City. 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. The current rates of population, housing unit and employment growth in Knox County continues to 2020. It also assumes that City and unincorporated County boundaries remain the same from 1999 to 2020. The table below contains detailed information pertaining to net residential and nonresidential increases as well as annual increases for this scenario.

**Demographic Assumptions  
Current Trends Scenario**

Category	Unincorporated County*		City of Knoxville**		Countywide Total	
	Net Increase 1999 to 2020	Avg. Ann. Increase	Net Increase 1999 to 2020	Avg. Ann. Increase	Net Increase 1999 to 2020	Avg. Ann. Increase
Population	133,624	6,074	34,190	1,554	167,814	7,628
<i>Housing Units</i>						
Single Family	38,783	1,763	8,368	380	47,152	2,143
Multifamily	5,750	261	5,470	249	11,220	510
Condominium	5,464	248	3,160	144	8,624	392
Mobile Home	4,188	190	157	7	4,345	198
<b>Total</b>	<b>54,186</b>	<b>2,463</b>	<b>17,155</b>	<b>780</b>	<b>71,341</b>	<b>3,243</b>
<i>Full-Time Equivalent Employment</i>						
Retail	7,959	362	4,028	183	11,988	545
Office	8,451	384	8,619	392	17,070	776
Industrial/Flex	21,233	965	8,917	405	30,149	1,370
Other	13,685	622	6,744	307	20,428	929
<b>Total</b>	<b>51,327</b>	<b>2,333</b>	<b>28,308</b>	<b>1,287</b>	<b>79,635</b>	<b>3,620</b>
<i>Nonresidential Sq. Ft. (1,000s)*</i>						
Retail	2,388	109	1,611	73	3,999	182
Office	2,231	101	2,413	110	4,644	211
Industrial/Flex	6,731	306	2,827	128	9,557	434
<b>Total</b>	<b>11,350</b>	<b>516</b>	<b>6,851</b>	<b>311</b>	<b>18,201</b>	<b>827</b>

\*Assumes 300 sq. ft. per retail employee, 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

*The retail and office employee assumptions are different due to the different types of development that occur within each area. For example, retail space in the City is more of the community and regional scale versus neighborhood scale in the County. Office development in the City is more of the downtown, high rise variety versus scattered low rise in the County.*

**1. Countywide**

The 1998 County population of 365,626 is projected to increase by 167,814 persons, or 46%, to a total of 533,440 in 2020. This amounts to 7,628 annually. Over the same time period, housing unit growth is projected to increase by approximately 71,340 units over the current number of 169,524, an increase of 42%, or 3,243 annually.

Countywide full-time equivalent employment is projected to increase by 79,635 jobs from 1999 to 2020. This is an increase of 3,620 annually. Countywide retail employment is projected to increase by 11,988 jobs, office employment by 17,070 jobs, industrial/flex by 30,149 jobs. In addition, employment in categories such as agriculture, local government, etc. is projected to increase by 20,428 jobs. These are increases of 545, 776, 1,370 and 929, 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 34,190 persons, or 20%, to a total of 202,044 in 2020. This amounts to 1,554 annually. Housing unit growth is projected to increase by 17,155 units over the current number of 81,976, an increase of 21%, or 780 annually.

The full-time equivalent employment in the City of Knoxville is projected to increase by 28,308, or 20%, from 1999 to 2020. This is an increase of 1,287 jobs annually. Retail employment in the City is projected to increase by 4,028 jobs, office employment by 8,619 jobs and industrial/flex by 8,917 jobs. In addition, employment in categories such as agriculture, local government, etc. is projected to increase by 6,744 jobs. These are increases of 183, 392, 405, and 307, respectively, on an annual basis.

### 3. *Unincorporated Knox County*

In unincorporated Knox County, the current population of 197,772 is projected to increase by 133,624 persons, or 68%, to a total of 331,396 in 2020. Housing unit growth is projected to increase by approximately 54,190 units over the current number of 87,548, an increase of 62%.

The full-time equivalent employment in the unincorporated County is projected to increase by 51,327 jobs, or 68%, from 1999 to 2020. This is an increase of 2,333 jobs annually. Retail employment in the unincorporated County is projected to increase by 7,959 jobs, office employment by 8,451 jobs and industrial/flex by 21,233 jobs. In addition, employment in categories such as agriculture, local government, etc. is projected to increase by 13,685 jobs. These are increases of 362, 384, 965, and 622, respectively, on an annual basis.

To project residential growth, TA analyzed residential building permit information in the City of Knoxville and unincorporated Knox County from 1990 to 1997. The average annual growth rate for each type of dwelling unit (i.e. single family) during this 8-year period was assumed for the 22-year analysis period. Population was then projected by applying household size by type of unit factors, developed from 1990 U.S. Bureau of Census information. The table below contains information pertaining to household size.

**Persons Per Household**

Type of Unit	City of Knoxville			Unincorporated County		
	Persons	Units	PPH	Persons	Units	PPH
Single Family	100,415	40,388	2.49	136,367	48,868	2.79
Multifamily	43,325	24,840	1.74	9,189	5,168	1.78
Condominium	7,304	3,471	2.10	5,313	2,534	2.10
Mobile Home	2,723	1,274	2.14	18,442	7,096	2.60
<b>Total</b>	<b>153,767</b>	<b>69,973</b>	<b>2.20</b>	<b>169,311</b>	<b>63,666</b>	<b>2.66</b>

Source: U.S. Bureau of Census

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 is 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. It also assumes that City and unincorporated County boundaries remain the same from 1999 to 2020. The table below contains detailed information pertaining to net residential and nonresidential increases as well as annual increases for this scenario.

**Demographic Assumptions  
Slower Growth Scenario**

Category	Unincorporated County*		City of Knoxville**		Countywide Total	
	Net Increase 1999 to 2020	Avg. Ann. Increase	Net Increase 1999 to 2020	Avg. Ann. Increase	Net Increase 1999 to 2020	Avg. Ann. Increase
Population	100,218	4,555	25,642	1,166	125,860	5,721
<i>Housing Units</i>						
Single Family	29,087	1,322	6,276	285	35,364	1,607
Multifamily	4,313	196	4,102	186	8,415	383
Condominium	4,098	186	2,370	108	6,468	294
Mobile Home	3,141	143	118	5	3,259	148
<b>Total</b>	<b>40,640</b>	<b>1,847</b>	<b>12,866</b>	<b>585</b>	<b>53,505</b>	<b>2,432</b>
<i>Full-Time Equivalent Employment</i>						
Retail	5,970	271	3,021	137	8,991	409
Office	6,338	288	6,465	294	12,803	582
Industrial/Flex	15,924	724	6,687	304	22,612	1,028
Other	10,263	467	5,058	230	15,321	696
<b>Total</b>	<b>38,495</b>	<b>1,750</b>	<b>21,231</b>	<b>965</b>	<b>59,726</b>	<b>2,715</b>
<i>Nonresidential Sq. Ft. (1,000s)</i>						
Retail	1,791	81	1,208	55	2,999	136
Office	1,673	76	1,810	82	3,483	158
Industrial/Flex	5,048	229	2,120	96	7,168	326
<b>Total</b>	<b>8,512</b>	<b>387</b>	<b>5,138</b>	<b>234</b>	<b>13,651</b>	<b>620</b>

\*Assumes 300 sq. ft. per retail employee, 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**

Under Slower Growth, County population is projected to increase by 125,860 persons, or 34%, to a total of approximately 491,500. This amounts to 5,721 persons annually. Over the same time period, housing unit growth is projected to increase by approximately 53,500 units over the current number of 169,524, an increase of 32%, or 2,432 annually.

Countywide full-time equivalent employment is projected to increase by 59,726 jobs, or 28%, from 1999 to 2020. This is an increase of 2,715 jobs annually. Countywide retail employment is projected to increase by 8,991 jobs, office employment by 12,803 jobs and industrial/flex by 22,612 jobs. In addition employment in categories such as agriculture, local government, etc. is projected to increase by 15,321 jobs. These are increases of 409, 582, 1,028, and 696, 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 25,642 persons, or 15%, to a total of 193,496 in 2020. This amounts to 1,166 annually. Housing unit growth is projected to increase by approximately 12,860 units over the current number of 81,976, an increase of 16%, or 585 units annually.

The full-time equivalent employment in the City of Knoxville is projected to increase by 21,231, or 15%, from 1999 to 2020. This is an increase of 965 jobs annually. Retail employment in the City is projected to increase by 3,021 jobs, office employment by 6,465 jobs and industrial/flex by 6,687 jobs. In addition employment in categories such as agriculture, local government, etc. is projected to increase by 5,058 jobs. These are increases of 137, 294, 304, and 230, respectively, on an annual basis.

## **3. *Unincorporated Knox County***

In unincorporated Knox County, the current population of 197,772 is projected to increase by 100,218 persons, or 51%, to a total of approximately 298,000 in 2020. This amounts to 4,555 annually. Housing unit growth is projected to increase by approximately 40,640 units over the current number of 87,548, an increase of 46%, or 1,847 units annually.

The full-time equivalent employment in the unincorporated County is projected to increase by 38,495 jobs, or 51%, from 1999 to 2020. This is an increase of 1,750 jobs annually. Retail employment in the unincorporated County is projected to increase by 5,970 jobs, office employment by 6,338 jobs and industrial/flex by 15,924 jobs. In addition, employment in categories such as agriculture, local government, etc. is projected to increase by 10,263 jobs. These are increases of 271, 288, 724, and 467, 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 21% 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 30% of the net increase in housing units, or 16,256 units versus 11,214 in Current Trends. The table below contains detailed information pertaining to net residential and nonresidential increases as well as annual increases for this scenario.

**Demographic Assumptions  
Higher Multifamily Scenario**

Category	Unincorporated County*		City of Knoxville**		Countywide Total	
	Net Increase 1999 to 2020	Avg. Ann. Increase	Net Increase 1999 to 2020	Avg. Ann. Increase	Net Increase 1999 to 2020	Avg. Ann. Increase
Population	129,503	5,886	34,190	1,554	163,693	7,441
<i>Housing Units</i>						
Single Family	33,742	1,534	8,368	380	42,110	1,914
Multifamily	8,453	384	5,470	249	13,923	633
Condominium	7,803	355	3,160	144	10,963	498
Mobile Home	4,188	190	157	7	4,345	198
<b>Total</b>	<b>54,186</b>	<b>2,463</b>	<b>17,155</b>	<b>780</b>	<b>71,341</b>	<b>3,243</b>
<i>Full-Time Equivalent Employment</i>						
Retail	7,714	351	4,028	183	11,742	534
Office	8,190	372	8,619	392	16,809	764
Industrial/Flex	20,578	935	8,917	405	29,494	1,341
Other	13,262	603	6,744	307	20,006	909
<b>Total</b>	<b>49,744</b>	<b>2,261</b>	<b>28,308</b>	<b>1,287</b>	<b>78,052</b>	<b>3,548</b>
<i>Nonresidential Sq. Ft. (1,000s)*</i>						
Retail	2,314	105	1,611	73	3,925	178
Office	2,162	98	2,413	110	4,576	208
Industrial/Flex	6,523	297	2,827	128	9,350	425
<b>Total</b>	<b>11,000</b>	<b>500</b>	<b>6,851</b>	<b>311</b>	<b>17,851</b>	<b>811</b>

\*Assumes 300 sq. ft. per retail employee, 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**

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 4,120 persons less than Current Trends. This is a result of the smaller household sizes for multifamily and condominium units (1.78 and 2.10) compared to single family units (2.79). The change in housing unit mix results in 2,703 additional multifamily and 2,339 additional condominium units under this scenario. The number of single family units decreases by 5,041 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 4,120 persons less than Current Trends. This is a result of the smaller household sizes for multifamily and condominium units (1.78 and 2.10) compared to single family units (2.79). The change in housing unit mix results in 2,703 additional multifamily and 2,339 additional condominium units under this scenario. The number of single family units decreases by 5,041 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. The table below contains detailed information pertaining to net residential and nonresidential increases as well as annual increases for this scenario.

### Demographic Assumptions Higher Retail Scenario

Category	Unincorporated County*		City of Knoxville**		Countywide Total	
	Net Increase 1999 to 2020	Avg. Ann. Increase	Net Increase 1999 to 2020	Avg. Ann. Increase	Net Increase 1999 to 2020	Avg. Ann. Increase
Population	133,624	6,074	34,190	1,554	167,814	7,628
<i>Housing Units</i>						
Single Family	38,783	1,763	8,368	380	47,152	2,143
Multifamily	5,750	261	5,470	249	11,220	510
Condominium	5,464	248	3,160	144	8,624	392
Mobile Home	4,188	190	157	7	4,345	198
<b>Total</b>	<b>54,186</b>	<b>2,463</b>	<b>17,155</b>	<b>780</b>	<b>71,341</b>	<b>3,243</b>
<i>Full-Time Equivalent Employment</i>						
Retail	7,959	362	2,718	124	10,677	485
Office	8,451	384	8,619	392	17,070	776
Industrial/Flex	21,233	965	8,917	405	30,149	1,370
Other	13,685	622	6,744	307	20,428	929
<b>Total</b>	<b>51,327</b>	<b>2,333</b>	<b>26,998</b>	<b>1,227</b>	<b>78,325</b>	<b>3,560</b>
<i>Nonresidential Sq. Ft. (1,000s)*</i>						
Retail	3,184	145	815	37	3,999	182
Office	2,231	101	2,413	110	4,644	211
Industrial/Flex	6,731	306	2,827	128	9,557	434
<b>Total</b>	<b>12,146</b>	<b>552</b>	<b>6,055</b>	<b>275</b>	<b>18,201</b>	<b>827</b>

\*Assumes 400 sq. ft. per retail employee, 264 per office employee and 317 per Industrial/flex employee

\*\*Assumes 300 sq. ft. per retail employee, 280 per office employee and 317 per Industrial/Flex employee

### 1. Countywide

The net increase in Countywide population, housing units and employment is the same as under Current Trends. However, the unincorporated County captures approximately 800,000 more square feet of regional-serving retail space than under Current Trends. The City of Knoxville captures approximately 800,000 square feet less.

### 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. However, the City captures approximately 800,000 square feet *less* retail space than 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 800,000 square feet more retail space than under Current Trends.

#### 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 .94 (50,922 jobs divided by 54,186 housing units) to 1.10, an increase of 15% and the City of Knoxville's jobs/housing ratio decreases 25%. The table below contains detailed information pertaining to net residential and nonresidential increases as well as annual increases for this scenario.

#### Demographic Assumptions Higher Employment Scenario

Category	Unincorporated County*		City of Knoxville**		Countywide Total	
	Net Increase 1999 to 2020	Avg. Ann. Increase	Net Increase 1999 to 2020	Avg. Ann. Increase	Net Increase 1999 to 2020	Avg. Ann. Increase
Population	133,624	6,074	34,190	1,554	167,814	7,628
<i>Housing Units</i>						
Single Family	38,783	1,763	8,368	380	47,152	2,143
Multifamily	5,750	261	5,470	249	11,220	510
Condominium	5,464	248	3,160	144	8,624	392
Mobile Home	4,188	190	157	7	4,345	198
<b>Total</b>	<b>54,186</b>	<b>2,463</b>	<b>17,155</b>	<b>780</b>	<b>71,341</b>	<b>3,243</b>
<i>Full-Time Equivalent Employment</i>						
Retail	9,131	415	2,857	130	11,988	545
Office	9,716	442	7,354	334	17,070	776
Industrial/Flex	24,232	1,101	5,917	269	30,149	1,370
Other	15,452	702	4,976	226	20,428	929
<b>Total</b>	<b>58,531</b>	<b>2,661</b>	<b>21,104</b>	<b>959</b>	<b>79,635</b>	<b>3,620</b>
<i>Nonresidential Sq. Ft. (1,000s)*</i>						
Retail	2,739	125	1,143	52	3,882	176
Office	2,565	117	2,059	94	4,624	210
Industrial/Flex	7,681	349	1,876	85	9,557	434
<b>Total</b>	<b>12,986</b>	<b>590</b>	<b>5,078</b>	<b>231</b>	<b>18,063</b>	<b>821</b>

\*Assumes 300 sq. ft. per retail employee, 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 net increase in Countywide population, housing units and employment is the same as under Current Trends. However, the distribution of jobs between the City and unincorporated County changes.

#### 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. However, the City captures approximately 7,200 less jobs than under Current Trends. This translates into a loss of approximately 1.7 million square feet of nonresidential space.

### **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 7,200 additional jobs in the unincorporated County. This translates into approximately 1.6 million more nonresidential square feet. This increase is as follows: 351,000 square feet of retail space, 334,000 square feet of office space and 951,000 square feet of industrial/flex space.

### III. GENERAL FUND REVENUES

A summary of the FY99 budgeted General Fund revenues by source is shown in the table below. As the table indicates, Property Taxes and Local Option Sales Tax comprise over 70% of total General Fund revenues. The sections below describe each of the revenue sources in more detail and the associated projection methodology that will be used in the fiscal analysis.

**FY99 General Fund Revenues  
Knox County, Tennessee**

Category	Amount	Percent
Property Taxes	\$57,571,426	62%
Local Option Sales Tax	\$9,027,500	10%
Licenses and Permits	\$1,599,000	2%
Fines, Forfeitures, Penalty	\$2,609,619	3%
Charges/Current Services	\$2,864,200	3%
Other Local Revenues	\$931,819	1%
Fees from Officials	\$4,635,750	5%
State of Tennessee	\$8,398,828	9%
Federal Government	\$15,000	0%
Other Government	\$2,408,000	3%
Appropriation from Fund Balance	\$2,463,310	3%
<b>Total</b>	<b>\$92,524,452</b>	<b>100%</b>

#### A. Local Taxes

The current levy for the General Fund is \$1.038 per \$100 of assessed value for *all real property*. The assessment rate is 25 percent of market value. Market values for new development are summarized in the table below.

*Insert market values table*

Local Option *Sales Tax* will be projected on a square foot basis. Based on the most recent information available from the Knoxville-Knox County Metropolitan Planning Commission, it is estimated that there is 4,712,224 square feet of retail space in the unincorporated County. When this is compared to the FY99 Local Option Sales Tax revenue of \$9,027,500, \$1.92 of Local Option Sales Tax is generated per square foot of retail space.

#### B. Licenses and Permits

This revenue category includes cable TV franchise tax revenues, as well as building permits and variance revenues. These revenues total \$1,599,000 in FY99. Cable TV revenues are projected to increase with additional housing unit growth in the County. Permit related revenues are not factored because these revenues essentially cover the costs of the Codes Administration operations. The expenses are therefore excluded. In other words the Codes budget will not exceed the revenues generated through permits.

**Licenses and Permits  
Knox County, Tennessee**

<b>Revenue</b>	<b>Amount</b>	<b>Projection Methodology</b>	<b>LOS Standard</b>
Cable TV Franchise	\$675,000	Per Housing Unit	\$3.98
Building Permits	\$900,000	Not Factored	See Text
Board of Construction Fee	\$1,000	Not Factored	See Text
Variances	\$23,000	Not Factored	See Text
<b>Total</b>	<b>\$1,599,000</b>		

**C. Fines, Forfeitures, and Penalties**

This category includes revenues generated from court-related fines. These revenues total \$2,609,619 in FY99 and are assumed to be driven by the amount of population residing in Knox County. Therefore it is assumed that as population increases in the County, so too will these revenues.

**Fines, Forfeitures, Penalties  
Knox County, Tennessee**

<b>Revenue</b>	<b>Amount</b>	<b>Projection Methodology</b>	<b>LOS Standard</b>
Circuit Court	\$34,700	Population	\$0.09
Criminal Court	\$213,000	Population	\$0.58
General Sessions Court	\$1,851,719	Population	\$5.06
Juvenile Court	\$333,000	Population	\$0.91
Chancery Court	\$48,000	Population	\$0.13
Other Courts	\$28,200	Population	\$0.08
Other Fines, Penalties	\$101,000	Population	\$0.28
<b>Total</b>	<b>\$2,609,619</b>		<b>\$7.14</b>

**D. Charges for Service**

This revenue category includes revenues generated from the Health Department and other sources. These revenues total \$2,864,200 in FY99. The majority of these revenues are projected to increase with population growth in the County. However, Environmental Health revenues are projected to increase with population and employment. Building Inspection fees are not factored since they help to cover the Codes Administration operating costs.

**Charges for Services  
Knox County, Tennessee**

<b>Revenue</b>	<b>Amount</b>	<b>Projection Methodology</b>	<b>LOS Standard</b>
Beer Permits	\$18,000	Population	\$0.05
Vital Statistics Fee	\$200,000	Population	\$0.55
Env. Health Fees-State	\$166,000	Pop./Emp.	\$0.29
Environmental Health Fees	\$119,000	Pop./Emp.	\$0.20
Misc. Rev-Health Department	\$28,000	Population	\$0.08
Dental Charges	\$175,000	Population	\$0.48
Rabies Clinic	\$12,000	Population	\$0.03
Preventative Health Fees	\$385,000	Population	\$1.05
X-Ray Fees	\$27,000	Population	\$0.07
Lab. Fees	\$100,000	Population	\$0.27
Pharmacy Fees	\$500,000	Population	\$1.37
Primary Care Fees	\$200,000	Population	\$0.55
Prenatal Care Fees	\$150,000	Population	\$0.41
Pediatric Fees	\$250,000	Population	\$0.68
Recreation Fees	\$279,200	Population	\$0.76
Reg. Deeds-Copy Fees	\$180,000	Population	\$0.49
Records Management Fees	\$5,000	Population	\$0.01
Building Codes-Inspections Fees	\$70,000	Not Factored	See Text
<b>Total</b>	<b>\$2,864,200</b>		<b>\$7.35</b>

**E. Other Local Revenues**

This category includes revenues generated from the sale of County property, interest on various accounts, indirect cost reimbursements, and rental of County facilities. These revenues total \$931,819 in FY99. The majority of these revenues are not expected to be impacted by new growth and will remain fixed in the fiscal impact analysis. However, rental income is projected to increase with population and jail concessions are not factored because the Jail Commissary is a fee sustained operation, much like an enterprise fund.

**Other Local Revenues  
Knox County, Tennessee**

<b>Revenue</b>	<b>Amount</b>	<b>Projection Methodology</b>	<b>LOS Standard</b>
Interest Earned	\$38,139	Fixed	\$0.00
Rentals	\$191,302	Population	\$0.52
Jail Concessions	\$480,048	Not Factored	See Text
Computer Usage	\$2,500	Fixed	\$0.00
Reimb. For Audits	\$9,830	Fixed	\$0.00
ASD Reimbursements	\$10,000	Fixed	\$0.00
Sale of Property	\$100,000	Fixed	\$0.00
Indirect Costs-CAC	\$50,000	Fixed	\$0.00
Miscellaneous Revenue	\$50,000	Fixed	\$0.00
<b>Total</b>	<b>\$931,819</b>		<b>\$0.52</b>

**F. Fees from Officials**

This category includes revenues generated from fees above the cost of operations for different court functions and various Sheriff revenues. These revenues total \$4,635,750 in FY99. These revenues are driven by the amount of population residing in Knox County. Therefore it is assumed that as population increases in the County, so too will these revenues.

**Fees from Officials  
Knox County, Tennessee**

<b>Revenue</b>	<b>Amount</b>	<b>Projection Methodology</b>	<b>LOS Standard</b>
County Clerk Excess Fees	\$500,000	Population	\$1.37
Circuit Court Excess Fees	\$300,000	Population	\$0.82
Criminal & 4th Courts Excess Fees	\$125,000	Population	\$0.34
Clerk & Master Excess Fees	\$150,000	Population	\$0.41
Reg. Of Deeds Excess Fees	\$200,000	Population	\$0.55
Trustee Excess Fees	\$3,015,000	Population	\$8.25
Sheriff-Records Fees	\$49,500	Population	\$0.14
Sheriff-Warrant Fees	\$119,000	Population	\$0.33
Sheriff-Identification Fees	\$8,000	Population	\$0.02
Sheriff-Gun Control Fees	\$20,500	Population	\$0.06
Work Release Fees	\$49,000	Fixed	\$0.00
Sheriff-Misc. Revenue	\$99,750	Population	\$0.27
<b>Total</b>	<b>\$4,635,750</b>		<b>\$12.54</b>

**G. State and Federal Revenues**

This category includes grants for certain Health Department salaries, income tax on dividends, child support revenues, alcoholic beverage taxes, etc. These revenues total \$7,063,828 in FY99. Many of these revenues are not expected to increase with new growth and are fixed in the fiscal impact analysis. Other revenues, such as income tax and alcoholic beverage taxes are projected to increase with additional population growth.

**State of Tennessee and Federal Revenues  
Knox County, Tennessee**

<b>Revenue</b>	<b>Amount</b>	<b>Projection Methodology</b>	<b>LOS Standard</b>
Health Department Salary Grants	\$1,970,184	Fixed	\$0.00
Detox Program	\$331,000	Fixed	\$0.00
Income Tax	\$1,350,000	Population	\$3.69
Beer Tax	\$15,500	Population	\$0.04
ABC Tax	\$250,000	Population	\$0.68
Mixed Drink Tax	\$24,000	Fixed	\$0.00
Child Support- J. Tarleton	\$535,000	Fixed	\$0.00
Child Support-Juv. Court	\$1,266,255	Population	\$3.46
Child Support-Incentive	\$503,989	Population	\$1.38
Jury Service	\$14,000	Fixed	\$0.00
Registrar's Salary Supplement	\$18,000	Fixed	\$0.00
Excess Tax-State Banks	\$725,000	Fixed	\$0.00
Criminal Court Fees	\$45,900	Population	\$0.13
Federal Section 4 Lunch	\$15,000	Fixed	\$0.00
<b>Total</b>	<b>\$7,063,828</b>		<b>\$9.39</b>

**H. Other Government Revenues**

The majority of this revenue source is comprised of correction revenues. This revenue category is \$2,408,000 in FY99. State and Federal revenues are not expected to increase with growth, as available correction bed space is expected to be occupied by County prisoners. Contracted Services and Peninsula Hospital revenues are also not expected to increase with additional population growth in the County.

**Other Government Revenues  
Knox County, Tennessee**

<b>Revenue</b>	<b>Amount</b>	<b>Projection Methodology</b>	<b>LOS Standard</b>
Prisoner Board-Federal	\$1,400,000	Fixed	\$0.00
Prisoner Board-State	\$950,000	Fixed	\$0.00
Contracted Services	\$38,000	Fixed	\$0.00
Peninsula Hospital	\$20,000	Fixed	\$0.00
<b>Total</b>	<b>\$2,408,000</b>		<b>\$0.00</b>



#### IV. GENERAL FUND OPERATING EXPENDITURES

##### A. General Administration

The table below summarizes General Administration expenditures by activity. These expenditures total \$6,368,869 in FY99. For each budget line item, or cost center, fixed and variable expenditures are broken out. Fixed expenditures were determined through conversations with department representatives and a detailed examination of the FY99 operating budgets. The projection methodology and resulting factor are also shown for each department. These factors will be used in the fiscal model to project future costs for each of the General Administration activities. Several expenditures are not expected to be impacted by new development in the County and are fixed in the fiscal impact analysis. Other expenditures are projected to increase with population and some with population and employment. Codes Administration is not factored since it is a fee sustained operation.

##### Cost Projection Methodologies General Administration

Cost	FY99 Budget	Fixed Portion	Variable Portion	Projection Methodology	LOS Standard
County Commission	\$554,065	\$554,065	\$0	Fixed	\$0.00
Equalization Board	\$14,457	\$0	\$14,457	Population	\$0.04
Codes Commission	\$15,000	\$0	\$15,000	Population	\$0.04
County Executive	\$681,685	\$681,685	\$0	Fixed	\$0.00
ADA Office	\$46,730	\$46,730	\$0	Fixed	\$0.00
Law Department	\$1,103,937	\$807,215	\$296,722	Population	\$0.81
Election Commission	\$957,755	\$375,659	\$582,096	Population	\$1.59
Register of Deeds	\$596,037	\$0	\$596,037	Population	\$1.63
Metropolitan Planning Commission	\$616,800	\$0	\$616,800	Pop./Emp.	\$1.06
Codes Administration	\$784,934	\$109,358	\$675,576	Not Factored	\$0.00
Geographic Information Systems	\$426,620	\$0	\$426,620	Pop./Emp.	\$0.73
County Building Maintenance	\$382,506	\$382,506	\$0	Fixed	\$0.00
Sheriff's Department Merit System	\$188,343	\$188,343	\$0	Fixed	\$0.00
<b>Total</b>	<b>\$6,368,869</b>	<b>\$3,145,561</b>	<b>\$3,223,308</b>		<b>\$5.91</b>

##### B. Finance

The table below summarizes Finance expenditures by activity. These expenditures total \$7,533,020 in FY99. The majority of the variable expenses are projected to increase with both population and employment. The County Clerk is projected to be impacted by population only and the County Trustee is considered a fixed expense.

**Cost Projection Methodologies  
Finance**

Cost	FY99 Budget	Fixed Portion	Variable Portion	Projection Methodology	LOS Standard
Finance	\$1,128,427	\$846,320	\$282,107	Pop./Emp.	\$0.49
Human Resources	\$322,912	\$143,503	\$179,409	Pop./Emp.	\$0.31
Purchasing	\$482,247	\$100,715	\$381,532	Pop./Emp.	\$0.66
Central Receiving	\$202,463	\$176,510	\$25,953	Pop./Emp.	\$0.04
Records Management	\$307,787	\$280,917	\$26,870	Pop./Emp.	\$0.05
Property Assessor	\$1,441,263	\$459,958	\$981,305	Pop./Emp.	\$1.69
Digitized Mapping	\$163,945	\$63,079	\$100,866	Pop./Emp.	\$0.17
County Trustee	\$276,044	\$276,044	\$0	Fixed	\$0.00
County Clerk	\$528,898	\$112,298	\$416,600	Population	\$1.14
Automated Systems	\$2,679,034	\$1,536,649	\$1,142,385	Pop./Emp.	\$1.97
<b>Total</b>	<b>\$7,533,020</b>	<b>\$3,995,993</b>	<b>\$3,537,027</b>		<b>\$6.51</b>

**C. Other Operating**

These expenditures total \$5,968,464 in FY99. The majority of these expenditures are fixed. However, appropriations to Economic and Community Development Boards is projected to increase with population and employment and Payments to Cities and Miscellaneous expenditures are projected to increase with population.

**Cost Projection Methodologies  
Other Operating**

Cost	FY99 Budget	Fixed Portion	Variable Portion	Projection Methodology	LOS Standard
ET Development District	\$26,860	\$26,860	\$0	Fixed	\$0.00
KCDC Tax Increment	\$681,056	\$681,056	\$0	Fixed	\$0.00
Econ. & Comm. Development Grants	\$1,068,904	\$0	\$1,068,904	Pop./Emp.	\$1.84
Veteran's Office	\$12,629	\$12,629	\$0	Fixed	\$0.00
Other Charges	\$2,216,065	\$1,466,065	\$750,000	Fixed	\$0.00
Legislative Delegation	\$41,982	\$41,982	\$0	Fixed	\$0.00
Payment to Cities	\$80,000	\$0	\$80,000	Population	\$0.22
Miscellaneous	\$1,074,569	\$0	\$1,074,569	Population	\$2.94
Operating Transfers	\$766,399	\$766,399	\$0	Fixed	\$0.00
<b>Total</b>	<b>\$5,968,464</b>	<b>\$2,994,991</b>	<b>\$2,973,473</b>		<b>\$5.00</b>

**D. Health**

The table below summarizes Health expenditures by activity. These expenditures total \$24,129,728 in FY99. The majority of the variable health expenses are projected to increase with population. Emergency Medical Services and Environmental Health are projected to increase with both population and employment. Building Operations expenses are projected using a marginal cost approach described in greater detail in the text below the table. Note that capital expenditures and methodologies are noted in Section XII of this report

**Cost Projection Methodologies  
Public Health and Welfare**

<b>Cost</b>	<b>FY99 Budget</b>	<b>Fixed Portion</b>	<b>Variable Portion</b>	<b>Projection Methodology</b>	<b>LOS Standard</b>
Health Administration	\$734,011	\$674,709	\$59,302	Population	\$0.16
Pharmacy	\$1,668,462	\$398,956	\$1,269,506	Population	\$3.47
Laboratory	\$431,252	\$230,441	\$200,811	Population	\$0.55
Social Services	\$198,899	\$0	\$198,899	Population	\$0.54
Building Operations	\$844,848	\$83,112	\$761,736	Marginal	See Text
Clinical and Health Support	\$3,200,532	\$120,842	\$3,079,690	Population	\$8.42
Adult Primary Care	\$1,580,506	\$0	\$1,580,506	Population	\$4.32
Animal Control	\$493,633	\$40,029	\$453,604	Population	\$1.24
Emergency Medical Services	\$1,288,573	\$87,168	\$1,201,405	Pop./Emp.	\$2.07
Pediatric Primary Care	\$716,469	\$0	\$716,469	Population	\$1.96
Dental Services	\$786,080	\$0	\$786,080	Population	\$2.15
Indigent Medical Care	\$4,250,000	\$0	\$4,250,000	Population	\$11.62
Detoxification Program	\$937,961	\$3,450	\$934,511	Population	\$2.56
John Tarleton Home	\$1,902,229	\$1,902,229	\$0	Fixed	\$0.00
Environmental Health	\$979,078	\$229,131	\$749,947	Pop./Emp.	\$1.29
Indigent Assistance	\$229,000	\$0	\$229,000	Population	\$0.63
Community Action Committee	\$820,374	\$0	\$820,374	Population	\$2.24
Community Services Agencies	\$290,500	\$0	\$290,500	Population	\$0.79
IV-D Child Support Court	\$1,622,058	\$137,269	\$1,484,789	Population	\$4.06
IV-D Child Support Clerk	\$345,339	\$254,911	\$90,428	Population	\$0.25
Dirty Lot Ordinance	\$183,139	\$183,139	\$0	N/A	\$0.00
Wastewater	\$78,000	\$78,000	\$0	N/A	\$0.00
Community Health Agencies	\$548,785	\$0	\$548,785	Population	\$1.50
<b>Total</b>	<b>\$24,129,728</b>	<b>\$4,423,386</b>	<b>\$19,706,342</b>		<b>\$49.84</b>

**I. Marginal Building Operation Costs**

The Health Department currently operates a Main Administration Building and five clinic/satellite facilities. However, the County owns just the Administration Building and two clinics. County-owned space totals approximately 139,000 square feet. When this is compared to the variable Building Operations costs of \$761,736, the operating cost per square foot is \$5.48. This will be applied to additional County-owned Health Department space that is constructed to serve new growth.

**E. Administration of Justice**

The table below summarizes Justice expenditures by activity. These expenditures total \$8,886,221 in FY99. The majority of the variable justice expenses are projected to increase with population. A few line items are not expected to be impacted by growth and will remain fixed in the analysis. Because of the availability of detailed data, the Attorney General and Court Officer budgets were projected using a marginal cost approach, which is described in more detail below the table.

**Cost Projection Methodologies  
Administration of Justice**

<b>Cost</b>	<b>FY99 Budget</b>	<b>Fixed Portion</b>	<b>Variable Portion</b>	<b>Projection Methodology</b>	<b>LOS Standard</b>
Circuit Court Clerk	\$104,060	\$44,935	\$59,125	Population	\$0.16
4th Circuit Court Clerk	\$197,514	\$74,914	\$122,600	Population	\$0.34
Circuit Court Judges	\$129,448	\$129,448	\$0	Fixed	\$0.00
4th Circuit Court Judges	\$41,065	\$41,065	\$0	Fixed	\$0.00
Criminal Court Clerk	\$218,107	\$99,372	\$118,735	Population	\$0.32
Criminal Court Judges	\$196,987	\$196,987	\$0	Fixed	\$0.00
General Sessions Court Clerk	\$306,222	\$154,072	\$152,150	Population	\$0.42
General Sessions Court Judge	\$976,050	\$130,741	\$845,309	Population	\$2.31
Chancery Court	\$271,351	\$188,140	\$83,211	Population	\$0.23
Juvenile Court Judge	\$1,592,062	\$461,383	\$1,130,679	Population	\$3.09
Juvenile Court Clerk	\$310,297	\$0	\$310,297	Population	\$0.85
Attorney General	\$1,178,562	\$367,644	\$810,918	Marginal	See Text
County Ordinances	\$40,359	\$40,359	\$0	Fixed	\$0.00
Probate Court	\$80,732	\$80,732	\$0	Fixed	\$0.00
Jury Commission	\$373,495	\$0	\$373,495	Population	\$1.02
Court Officers	\$1,274,589	\$129,448	\$1,145,141	Marginal	See Text
Cases Charged to County	\$350,000	\$0	\$350,000	Population	\$0.96
Probation Office	\$546,057	\$58,244	\$487,813	Population	\$1.33
DUI School	\$22,800	\$22,800	\$0	Fixed	\$0.00
Public Defender	\$676,464	\$0	\$676,464	Population	\$1.85
<b>Total</b>	<b>\$8,886,221</b>	<b>\$2,220,284</b>	<b>\$6,665,937</b>		<b>\$12.88</b>

**1. Marginal Attorney General Staff Costs**

There were 60,000 cases filed in all courts in FY1998. When this is compared to the 1999 population estimate in the County of 365,626, there are .16 cases filed for every resident in the County. An analysis of the Attorney General's budget indicates there are several positions which would qualify as variable personnel expenses, meaning that as growth continues in the County, additional staff will be needed to handle increased office activities. These positions include 3 Investigators, 7 Assistant Attorney Generals, and 7 Administrative Secretaries. In order to project the marginal personnel cost increases that will result with additional population growth in the County, TA has documented the current level of service in terms of cases filed by type of employee. There are currently 3 Equipment Operators. For purposes of the fiscal impact analysis it is assumed that one new Investigator is hired for every additional 20,000 cases filed (60,000 cases divided by 3). It is assumed these personnel are hired at a salary/benefits package of \$44,339. There are currently 7 Assistant Attorney Generals. Therefore it is assumed that one new Assistant Attorney General is hired for every additional 8,570 cases filed (60,000 cases divided by 7). In addition, it is assumed that one new Administrative Secretary is hired for each new Assistant Attorney General, with a salary and benefits package of \$17,150.

**2. Attorney General Non-Salary Operating Costs**

There is \$124,895 in variable non-salary operating expenses in the Attorney General's FY99 operating budget. This is projected to increase on a per capita basis. Therefore, the variable operating expenses of \$124,895 is divided by the 1998 population estimate of 365,626, for a per capita cost of \$.34.

### 3. *Marginal Court Officer Staff Costs*

There were 996 court-related arrests filed in FY1998. When this is compared to the 1999 population estimate in the County of 365,626, there are .0027 arrests for every resident in the County. An analysis of the Court Officer's budget indicates there are several positions which would qualify as variable personnel expenses, meaning that as growth continues in the County, additional officers will be needed to handle increased court activity. These positions include 35 Court Officers and 8 Court Security Officers. In order to project the marginal personnel cost increases that will result with additional population growth in the County, TA has documented the current level of service in terms of arrests by type of officer. For purposes of the fiscal impact analysis it is assumed that one new Court Officer is hired for every additional 28 arrests (996 arrests divided by 35). It is assumed these officers are hired at a salary/benefits package of \$22,869. There are currently 8 Court Security Officers. Therefore it is assumed that one new Court Security Officer is hired for every additional 125 arrests (996 arrests divided by 8). It is assumed these officers are hired at a salary and benefits package of \$30,146.

### F. **Public Safety**

The table below summarizes Public Safety expenditures by activity. These expenditures total \$24,129,728 in FY99. The majority of the variable Public Safety expenses will increase with additional population and employment growth in the County.

#### 1. *Sheriff Marginal Operating Costs*

For purposes of the fiscal impact analysis, Sheriff costs are divided into two categories: 1) Countywide services; and, 2) Unincorporated County services. Countywide services are those that benefit all citizens, regardless of place of residence. Examples of countywide services are warrant service and detective activities. An unincorporated county service is one that is primarily conducted outside the City of Knoxville corporate limits. An example of this is patrol. Warrant Division expenditures are considered countywide because service of warrants is provided within the unincorporated county and the City of Knoxville.

For unincorporated county Public Safety non-salary expenses, calls for service are used to allocate these costs by land use. There were a total of 113,280 calls for service in 1998. A sample of calls was taken in order to gauge the percentage of residential and nonresidential calls for service. The sample resulted in 72% of calls being residential in nature and 28% are nonresidential. Since all calls are not tracked by land use, it was determined that this sample was a good representative proxy.

**Calls for Service Sample, 1998  
Knox County, Tennessee**

Type	Calls*	%
Residential	13,020	72%
Nonresidential	4,989	28%
<b>Total</b>	<b>18,009</b>	<b>100%</b>

\*Sample of Calls

Source: Knox County Sheriff's Office

The table below breaks out the residential portion (72%) of variable unincorporated county Sheriff non-salary operating expenses that are projected to increase with additional residential and nonresidential development, based on calls for service. The residential portion is then divided by the existing *unincorporated* county population and multiplied by the household size for each type of residential unit to obtain a cost per unit factor.

**Sheriff's Office Residential Land Use Factors**

***Unincorporated County Expenses***

**FY99 Non-Salary Variable Operating Costs**

Patrol	\$515,574		
Forensics	\$262,092		
<b>Total</b>	<b>\$777,666</b>	<b>Existing Pop.</b>	<b>197,772</b>
<b>Residential Portion (72%)*</b>	<b>\$559,920</b>	<b>Per Capita Cost</b>	<b>\$2.83</b>

<b>Land Use</b>	<b>Household Size-County**</b>	<b>Cost per Unit</b>
Single Family	2.79	\$7.90
Multifamily	1.78	\$5.03
Condominium	2.10	\$5.94
Mobile Home	2.60	\$7.36

\*Based on 1998 calls for service information provided by the Sheriff's Office

\*\*Based on analysis of 1990 U.S. Census Bureau Data

The table below breaks out the residential portion (72%) of variable countywide Sheriff non-salary operating expenses that are projected to increase with additional residential and nonresidential development, based on calls for service. The residential portion is then divided by the existing population and multiplied by the household size for each type of residential unit to obtain a cost per unit factor.

**Sheriff's Office Residential Land Use Factors**

**Countywide Expenses**

**FY99 Non-Salary Variable Operating Costs**

Sheriff's Administration	\$395,500		
Detectives	\$234,819		
Training	\$295,222		
Records & Communications	\$1,437,386		
Warrants#	\$122,013		
Planning & Development	\$18,609		
<b>Total</b>	<b>\$2,503,549</b>	<b>Existing Pop.</b>	<b>365,626</b>
<b>Residential Portion (72%)*</b>	<b>\$1,836,719</b>	<b>Per Capita Cost</b>	<b>\$5.02</b>

<b>Land Use</b>	<b>Household Size-County**</b>	<b>Cost per Unit</b>	<b>Household Size-City**</b>	<b>Cost per Unit</b>
Single Family	2.79	\$14.02	2.49	\$12.49
Multifamily	1.78	\$8.93	1.74	\$8.76
Condominium	2.10	\$10.53	2.10	\$10.57
Mobile Home	2.60	\$13.06	2.14	\$10.74

\*Based on 1998 calls for service information provided by the Sheriff's Office

\*\*Based on analysis of 1990 U.S. Census Bureau Data

#100% of Warrants costs are residential

The nonresidential methodology allocates the nonresidential portion (28%) of the Sheriff non-salary operating budget, which totals \$308,407 for unincorporated county expenses and \$666,830 for countywide expenses. The nonresidential portion of the budget is allocated by type of nonresidential land use. Since specific records for calls for service by land use type are not available, trips by type of nonresidential land use are utilized as a realistic proxy. This methodology indicates that the greatest calls for service on a per square foot basis are for retail, then office and then flex. The table below summarizes the nonresidential vehicle trips on an average weekday in Knox County.

**Nonresidential Vehicle Trips on an Average Weekday**  
Knox County, Tennessee

	<i>Assumptions</i>		
	<i>County*</i>	<i>City**</i>	
<i>Nonresidential Gross Floor Area (1,000 sq. ft.)</i>			
Retail/Shopping Center	4,712	7,911	
Office	3,127	10,579	
Ind/Flex	13,607	18,955	
<i>Average Weekday Vehicle Trips Ends per 1,000 Sq. Ft.</i>			<i>Trip Factors</i>
Retail/Shopping Center	87.31	68.17	32%
Office	18.31	15.59	50%
Ind/Flex	6.96	6.96	50%
<i>Nonresidential Vehicle Trips on an Average Weekday</i>			
Retail/Shopping Center	131,656	172,565	
Office	28,626	52,777	
Ind/Flex	47,353	42,217	
<b>Total</b>	<b>207,636</b>	<b>267,559</b>	<b>Total 475,194</b>

\*Trip rates are from Institute of Transportation Engineers (ITE) Trip Generation Manual (1997). Assumes 300 sq. ft. per retail employee, 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

Average Weekday Vehicle Trip Ends are from the reference book, Trip Generation, published by the Institute of Transportation Engineers (6th Edition, 1997). A "trip end" represents a vehicle either entering or exiting a development. Trip rates have been adjusted to avoid over estimating the number of actual trips because one vehicle trip is counted in the trip rates of both the origination and destination points. A simple factor of 50% has been applied to Office and Flex categories. The Retail/Shopping Center category has a trip factor of less than 50% because this type of development attracts vehicles as they pass-by on arterial and collector roads. For example, when someone stops at a convenience store on their way home from work, the convenience store is not their primary destination. The ITE manual indicates that on average 37% of the vehicles entering shopping centers are passing by on the way to some other primary destination and 63% of the attraction trips have the shopping centers as their primary destination. Therefore, the adjusted trip factor is 32% (0.63 x 0.50).

Based on the 207,636 average daily nonresidential trips in the unincorporated county and the nonresidential operating cost for unincorporated county Sheriff's Office expenses of \$308,407 (28% of \$1,101,454), the operating cost per nonresidential vehicle trip is \$1.49. This level of service standard is then multiplied by the associated nonresidential trip ends and trip factors to derive the nonresidential factor increase for unincorporated county Sheriff's Office expenses.



**Nonresidential Land Use Factors for Sheriff Non-Salary Operating Costs**

Unincorporated County Expenses

<i>Nonresidential Weekday Vehicle Trips per 1,000 Sq. Ft.</i>	<i>Standards</i>	<i>Trip Factors</i>
Retail/Shopping Center	87.31	32%
Office	18.31	50%
Ind/Flex	6.96	50%

*Level of Service Standards*

Nonresidential Operating Costs (28% x \$1,101,454)	\$308,407
Nonresidential Vehicle Trips (unincorporated County)	207,636
Operating Cost per Vehicle Trip	\$1.49

<b>Operating Costs</b>	<b>Per 1,000 sq. ft.</b>	<b>Per Employee*</b>
Retail/Shopping Center	\$41.50	\$12.46
Office	\$13.60	\$3.59
Ind/Flex	\$5.17	\$1.64

\*Based on 300 square feet per retail employee, 264 square feet per office employee and 317 square feet per flex employee

Based on the countywide 475,194 average daily nonresidential trips and the nonresidential operating cost for countywide Sheriff's Office expenses of \$666,830, the operating cost per nonresidential vehicle trip is \$1.40. This level of service standard is then multiplied by the associated nonresidential trip ends and trip factors to derive the nonresidential factor increase for countywide Sheriff's Office expenses.

**Nonresidential Land Use Factors for Sheriff Non-Salary Operating Costs**

Countywide Expenses

<i>Nonresidential Weekday Vehicle Trips per 1,000 Sq. Ft.</i>	<i>Standards</i>		<i>Trip Factors</i>
	<i>County*</i>	<i>City**</i>	
Retail/Shopping Center	87.31	68.17	32%
Office	18.31	15.59	50%
Ind/Flex	6.96	6.96	50%

*Level of Service Standards*

Nonresidential Operating Costs (28% x \$1,611,476)	\$666,830
Nonresidential Vehicle Trips	475,194
Operating Cost per Vehicle Trip	\$1.40

<b>Operating Costs</b>	<b>Per 1,000 sq. ft.</b>		<b>Per Employee*</b>	
	<i>County</i>	<i>City</i>	<i>County</i>	<i>City</i>
Retail/Shopping Center	\$39.21	\$30.61	\$11.77	\$12.24
Office	\$12.85	\$10.94	\$3.39	\$3.06
Ind/Flex	\$4.88	\$4.88	\$1.55	\$1.55

\*Based on 300 square feet per retail employee, 264 square feet per office employee and 317 square feet per flex employee

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

**2. Marginal Sheriff Patrol Staff Costs**

The need for additional sworn patrol officers will increase as additional calls for service are generated from new residential and nonresidential uses. In order to project additional calls for service, 1998 residential calls are compared to the existing population and nonresidential calls are compared to the number of nonresidential vehicle trips generated on an average weekday.

This results in .223 calls per capita (81,562 calls divided by 365,626) and .067 calls per nonresidential trip (31,718 calls divided by 475,194 nonresidential trips).

As the table below indicates, there are currently 108 sworn deputies in the Patrol Division. When this is compared to the 113,280 calls for service in 1998, there are 1,049 calls per sworn deputy. Therefore, for purposes of the fiscal impact analysis, a new deputy sheriff with an associated salary of \$31,461, including benefits, will be incurred by the County for each additional 1,049 calls for service. In addition, there are 10 officers per Sergeant and 22 officers per Lieutenant and 22 officers per Captain. These supervisory positions will be hired at these levels of service using the salary assumptions in the table below.

**Sheriff Patrol Sworn Personnel LOS Factors**

**Knox County, Tennessee**

<b>Call s for Service</b>	<b>Calls*</b>	<b>%</b>
Residential Calls	81,562	72%
Nonresidential Calls	31,718	28%

**Levels of Service**

Current Population	365,626
Total Nonresidential Trips	475,194

Calls per Capita	0.223
Calls per Nonres. Trip	0.067

Number of Sworn Patrol Officers	108
Calls for Service per Officer	1,049
Cost per Patrol Officer	\$31,461

Patrol Sergeants	11
Patrol Officers per Sergeant	10
Cost per Sergeant	\$40,123

Patrol Lieutenant	5
Patrol Officers per Lieutenant	22
Cost per Lieutenant	\$49,401

Patrol Captains	5
Patrol Officers per Captain	22
Cost per Captain	\$58,677

\*Assumes sample is an accurate proxy for total calls

**2. Marginal Sheriff Warrant Staff Costs**

The need for additional sworn officers in the Warrants Division will increase as criminal and civil warrant service increases as a result of additional population growth in the County. In order to project additional warrant service, FY1998 criminal and civil warrant service of 37,500 is compared to the existing population of 365,626. This results in .102 warrants per capita.

There are currently 23 sworn deputies involved in warrant service. When this is compared to the 37,500 warrants served in FY98, there are 1,630 warrants per sworn deputy. Therefore, for purposes of the fiscal impact analysis, a new deputy sheriff with an associated salary of

\$31,473, including benefits, will be incurred by the County for each additional 1,630 warrant services.

**3. Marginal Sheriff Detective Cost**

The need for additional sworn detectives will increase as additional calls for service are generated from new residential and nonresidential uses that the Patrol Division responds to.

As the table below indicates, there are currently 6 sworn detectives, 18 sworn detective sergeants, and 4 sworn detective lieutenants in the Detectives Division. When this is compared to the 113,280 calls for service in 1998, there are 18,880 calls per sworn detective, 6,293 calls per sworn detective sergeant, and 28,230 per sworn detective lieutenant. Therefore, for purposes of the fiscal impact analysis, these positions will be hired based on the levels of service discussed above, using the salary assumptions shown in the table below.

<b>Sheriff Detective Sworn Personnel LOS Factors</b>		
<b>Knox County, Tennessee</b>		
<b>Call s for Service</b>	<b>Calls</b>	<b>%</b>
Residential Calls	81,562	72%
Nonresidential Calls	31,718	28%
<b>Levels of Service</b>		
Current Population		365,626
Total Nonresidential Trips		475,194
Calls per Capita		0.310
Calls per Nonres. Trip		0.067
Number of Sworn Detectives		6
Calls for Service per Detective		18,880
Cost per Detective		\$31,461
<hr/>		
Number of Detective Sergeants		18
Calls for Service per Sergeant		6,293
Cost per Sergeant		\$40,123
<hr/>		
Number of Detective Lieutenants		4
Calls per Lieutenant		28,320
Cost per Lieutenant		\$49,401

\*Assumes sample is an accurate proxy for total calls

**G. Social/Cultural/Recreational**

The table below summarizes Social/Cultural/Recreational expenditures by activity. These expenditures total \$2,270,409 in FY99. The majority of Social/Cultural/Recreational expenditures will increase with additional population growth in Knox County. Park Maintenance expenditures will increase as additional park facilities are opened to serve new growth, so a marginal cost approach is used. Detailed explanation of the approach is provided below the projection methodologies table. The contract with cable channel 20 is a fixed expenditure.

**Cost Projection Methodologies  
Social/Cultural/Recreational**

Cost	FY99 Budget	Fixed Portion	Variable Portion	Projection Methodology	LOS Standard
Parks and Recreation	\$845,006	\$259,788	\$585,218	Population	\$1.60
Park Maintenance	\$1,001,479	\$145,948	\$855,531	Marginal	See Text
Concord Pool	\$91,523	\$71,373	\$20,150	Population	\$0.06
Senior Center	\$38,785	\$20,502	\$18,283	Population	\$0.05
Grants to Agencies	\$263,000	\$0	\$263,000	Population	\$0.72
Contract	\$30,616	\$30,616	\$0	Fixed	\$0.00
<b>Total</b>	<b>\$2,270,409</b>	<b>\$528,227</b>	<b>\$1,742,182</b>		<b>\$2.43</b>

**1. Marginal Operating Costs**

**a. Park Maintenance Staffing**

The Knox County Parks and Recreation Department currently manages 1,200 acres of park land in the County. In order to project the marginal personnel cost increases that will result as additional park facilities are constructed, TA has documented the current level of service in terms of acres maintained by type of employee. There are currently 27 Equipment Operators. These positions vary in terms of level I to level III. For purposes of the fiscal impact analysis it is assumed that one new Equipment Operator is hired for every additional 44 acres of park land (1,200 acres divided by 27). It is assumed these personnel are hired at level II, with a salary/benefits package of \$24,064. There are currently 6 Crew Leaders supervising 27 Equipment Operators. Therefore it is assumed that for every 4 Equipment Operators hired, a Crew Leader will be hired with a salary and benefits package of \$29,790. In addition, there is one carpenter for every 600 acres, with a salary and benefits package of \$27,064.

**Marginal Park Personnel Assumptions**

Position	FY99 Positions	FY99 Avg. Salary*	FY99 LOS
Equipment Operators	27	\$24,064	1 per 44 acres
Maintenance Crew Leaders	6	\$29,790	1 per 4 Equip. Oper.
Project Carpenters	2	\$27,064	1 per 600 acres

\*Includes benefits

**b. Maintenance Cost Per Acre**

The FY99 budget contains \$179,186 in non-salary operating expenditures for parks maintenance. When this is compared to the 1,200 acres of parkland, the current maintenance cost per acre is \$149.

**H. Agriculture and Natural Resources**

The table below summarizes Agriculture and Natural Resources expenditures by activity. These expenditures total \$326,870 in FY99. Extension Service and Soil Conservation costs are projected to increase with additional population growth in the County. The State Forestry contribution is considered a fixed expense.

**Cost Projection Methodologies  
Agriculture and Natural Resources**

<b>Cost</b>	<b>FY99 Budget</b>	<b>Fixed Portion</b>	<b>Variable Portion</b>	<b>Projection Methodology</b>	<b>LOS Standard</b>
Extension Service	\$230,818	\$0	\$230,818	Population	\$0.63
State Forestry	\$4,000	\$4,000	\$0	Fixed	\$0.00
Soil Conservation District	\$92,052	\$0	\$92,052	Population	\$0.25
<b>Total</b>	<b>\$326,870</b>	<b>\$4,000</b>	<b>\$322,870</b>		<b>\$0.88</b>

## V. PUBLIC LIBRARY FUND

The Public Library Fund is used to account for the operations of the Knox County Library System. The Library System is a Countywide service, with a Central Library and 17 branch locations throughout the County.

### A. Revenues

The table below shows Public Library Fund revenues and their allocation methodology. Some of these revenues will increase with additional development in Knox County. For example, as new residential units and nonresidential space is constructed, the amount of Property Taxes received will increase. Therefore, the current tax rate of \$0.138 will be applied against the assessed value assumptions for new units. Revenues such as Charges for Service and Other Local Revenues will increase with population as more people utilize the Library System.

**Public Library Fund Revenues  
Knox County, Tennessee**

Revenue	Amount	Allocation Methodology	LOS Standard
Property Taxes	\$6,296,876	Per \$100 Asses. Value	\$0.138
Charges for Service	\$240,000	Population	\$0.66
Other Local Revenues	\$8,100	Population	\$0.02
Other	\$21,000	Fixed	\$0.00
Appropriation from Fund Balance	\$51,075	Fixed	\$0.00
<b>Total</b>	<b>\$6,617,051</b>		<b>\$0.82</b>

### B. Operating Expenditures

Public Library Fund expenditures will increase as new facilities are constructed and expanded to serve additional residential development in Knox County. A marginal cost approach has been used for personnel and operations and maintenance cost associated with new branch locations constructed and expanded. Contracted Services, Other Charges, and Capital Outlay are projected to increase with population.

**Public Library Fund Operating Expenditures  
Knox County, Tennessee**

Expenditure	Amount	Allocation Methodology	LOS Standard
Personal Services	\$3,728,160	Marginal-See Text	N/A
Benefits	\$735,319	Marginal-See Text	N/A
Contracted Services	\$532,034	Population	\$1.46
Supplies and Materials	\$1,289,771	Marginal-See Text	N/A
Other Charges	\$198,361	Population	\$0.54
Capital Outlay	\$133,975	Population	\$0.37
<b>Total</b>	<b>\$6,617,620</b>		<b>\$2.36</b>

**1. Marginal Operating Costs**

The table below shows the assumptions for marginal operating cost increases incurred as a branch is opened or expanded. These estimates are based on recent expenses incurred with the Cedar Bluff Branch. These assumptions will be applied to the facility construction assumptions found in Section XII of this document.

**Annual Branch Expenses\***

<b>Expense</b>	<b>Amount</b>
Salaries and Benefits	\$167,116
Utilities	\$25,315
Materials Budget	\$80,000
Leases	\$1,272
Security	\$240
Pest Control	\$240
Supplies	\$10,667
Cleaning Service	\$8,112
<b>Total</b>	<b>\$292,962</b>

\*Based on recent Cedar Bluff Branch expenses

Source: Knox County Library

Expenses will also increase with the need for Central Library support staff when additional branches (points of service) are constructed. These assumptions are shown in the table below. *These increases will not be applied to branch expansions but to the Central Library.*

**Central Library Support Expenses**

<b>Expense</b>	<b>Amount</b>
Assist. To Branch Service Manager	\$21,672
Security Guard	\$8,142
Processing Assistant	\$14,744
Automated Systems Technician	\$15,070
Benefits	\$11,777
<b>Total</b>	<b>\$71,405</b>

Source: Knox County Library

## VI. GENERAL PURPOSE SCHOOL FUND

The General Purpose School Fund is used to account for the operations of the Knox County School System. The County School System operates 52 elementary schools, 16 middle schools, and 17 high schools. Total enrollment for the 1998-1999 school year is 52,354.

### A. Revenues

The table below shows General Purpose School Fund revenues and their allocation methodology. Some of these revenues will increase with additional residential development in Knox County. For example, as new residential units are constructed, the amount of Property Taxes received will increase. Therefore, the current tax rate of \$1.273 will be applied against the assessed value assumptions for new residential and nonresidential construction. Local Option Sales Tax revenue will increase with additional retail square footage. Charges for Service is from tuition paid by out of county students that attend Knox County schools. This revenue source will remain fixed as it is not likely to increase with County population growth. Other Local Revenues is primarily from the sale of houses constructed by vocational education students, which also is not likely to increase and will remain fixed in the analysis. State of Tennessee revenues are allocated to Counties based on a complicated formula that considers growth in State revenues, Property Tax growth, a County's affluence relative to other Counties, as well as many other factors. Conversations with the Board of Education indicates that the best way to project State of Tennessee revenues is on a per pupil basis. Federal revenues will remain fixed as they are primarily reimbursements for the ROTC program.

**General Purpose School Fund Revenues  
Knox County, Tennessee**

Revenue	Amount	Allocation Methodology	LOS Standard
Property Taxes	\$62,152,954	Per \$100 Asses. Value	\$1.273
Local Option Sales Tax	\$75,782,000	Per Retail Square Foot	\$6.00
Licenses	\$40,000	Population	\$0.11
Charges/Current Service	\$252,500	Fixed	\$0.00
Other Local Revenue	\$374,000	Fixed	\$0.00
State of Tennessee	\$106,906,540	Per Pupil	\$2,042
Federal Government	\$432,000	Fixed	\$0.00
Operating Transfers	\$220,000	Fixed	\$0.00
Appropriation from Fund Balance	\$1,900,000	Fixed	\$0.00
<b>Total</b>	<b>\$248,059,994</b>		

### B. Operating Expenditures

The table below shows School Fund expenditures and their allocation methodology. These expenditures will increase with enrollment and as new school facilities are constructed to serve additional residential development in Knox County. A marginal cost approach has been used for teachers needed to serve enrollment increases, as well as for operation and maintenance cost associated with new school construction (see discussion below).



**Cost Projection Methodologies  
General Purpose School Fund**

<b>Cost</b>	<b>FY99 Budget</b>	<b>Projection Methodology</b>	<b>LOS Standard</b>
Regular Instruction	\$121,296,024	Marginal	See text
Fixed Expenses	\$26,757,184	Fixed	N/A
Operation of Plant	\$19,192,869	Marginal	See Text
Maintenance of Plant	\$9,511,762	Marginal	See Text
Pupil-Related Variable Expenses	\$71,302,155	Per Pupil	\$1,362
<b>Total</b>	<b>\$248,059,994</b>		

**1. Marginal Operating Costs**

**a. Classroom Teachers**

As additional students are generated by new development, additional classroom teachers will have to be hired to maintain the current level of service of 1 teacher per 21 elementary school pupils, 1 teacher per 27 middle school pupils, and 1 teacher per 29 high school pupils. Additional school children generated by new residential development will be forecasted using pupil generation rates, by type of housing. These pupil generation rates were developed from 1990 Census information, utilizing information pertaining to school age children by type of housing unit and the percentage attending private schools. These rates are shown in the table below. The FISCALS model being developed for Knox County will hire classroom teachers as new students enter the school system. The County Board of Education provided TA with an average cost per new teacher of \$34,440, including benefits.

**Public School Pupil Generation Rates**

<b>Housing Type</b>	<b>County</b>				<b>City</b>			
	<b>Elem.</b>	<b>Middle</b>	<b>High</b>	<b>Total</b>	<b>Elem.</b>	<b>Middle</b>	<b>High</b>	<b>Total</b>
Single Family	0.22	0.11	0.15	<b>0.47</b>	0.18	0.09	0.12	<b>0.38</b>
Condominium	0.06	0.03	0.07	<b>0.15</b>	0.09	0.03	0.09	<b>0.20</b>
Multifamily	0.09	0.03	0.04	<b>0.17</b>	0.10	0.04	0.05	<b>0.19</b>
Mobile Home	0.34	0.15	0.18	<b>0.67</b>	0.18	0.06	0.10	<b>0.34</b>

Source: US Census Bureau

**b. Non-Classroom Staff and Operations and Maintenance**

As additional school facilities are constructed to accommodate new development in the County, there will be an increase in non-classroom staff (i.e. principal and administrative staff), as well as operating and maintenance costs. The Board of Education provided the following marginal staffing cost estimates for the "prototypical" elementary, middle and high schools.

**Prototype School Staffing Assumptions  
Knox County, Tennessee**

<b>Position</b>	<b>Elementary</b>	<b>Middle</b>	<b>High</b>
Principals	\$64,000	\$64,000	\$64,000
Assistant Principals	\$52,027	\$101,260	\$155,653
Guidance Counselors	\$51,312	\$70,080	\$70,080
Psychologists/Diagnosticians	\$18,952	\$35,981	\$56,785
Librarians	\$51,155	\$68,122	\$102,310
Social Workers	\$17,807	\$17,807	\$17,807
Health Services	\$33,329	\$33,329	\$52,898
Security Guard	\$0	\$14,132	\$14,132
School Secretaries	\$68,908	\$94,699	\$129,153
Educational Assistants	\$105,220	\$124,236	\$124,589
Food Service	\$74,672	\$107,343	\$144,679
Custodians	\$81,260	\$124,822	\$168,385
Maintenance	\$68,000	\$108,755	\$136,000
<b>Total</b>	<b>\$686,642</b>	<b>\$964,566</b>	<b>\$1,236,471</b>

The table below shows the marginal utility and maintenance cost assumptions for the "prototypical" elementary, middle and high schools.

**Marginal Utilities and Maintenance Assumptions  
Knox County, Tennessee**

<b>School</b>	<b>Utilities</b>	<b>Maintenance</b>	<b>Total</b>
Elementary	\$60,000	\$136,330	\$196,330
Middle	\$175,000	\$232,850	\$407,850
High	\$200,000	\$322,500	\$522,500

## **VII. AIR POLLUTION FUND**

The Air Pollution Fund is used to account for Knox County's enforcement of federal air pollution guidelines and applicable County ordinances. The Air Pollution Fund is an enterprise fund that is sustained through charges for service and federal monies, rather than through a property tax millage. Therefore it is not factored in the fiscal impact analysis because it is assumed that these revenues always cover expenses.

## VIII. SOLID WASTE FUND

The Solid Waste Fund is used to account for all solid waste and recycling activities provided by Knox County.

### A. Revenues

The table below shows Solid Waste Fund revenues and their allocation methodology. These revenues will increase with additional development in Knox County. For example, as new residential units are constructed, the amount of Property Taxes received will increase. Therefore, the current tax rate of \$0.054 will be applied against the assessed value assumptions for new development countywide. Other Local Revenues is primarily comprised of sales of recycled materials, which is projected to increase with population. State of Tennessee revenues are not factored since it is a grant that funds the Litter Program, which is 100% grant funded. Conversely, the Litter Program costs are not factored either, resulting in a "wash".

#### Solid Waste Fund Revenues Knox County, Tennessee

Revenue	Amount	Allocation Methodology	LOS Standard
Property Taxes	\$2,644,026	Per \$100 Asses. Value	\$0.054
Other Local Revenues	\$92,000	Population	\$0.25
State of Tennessee	\$151,297	Not Factored	See Text
<b>Total</b>	<b>\$2,887,323</b>		

### B. Operating Expenditures

The table below summarizes Solid Waste Fund expenditures by activity. These expenditures total \$2,887,323 in FY99. Solid Waste Fund expenditures will increase as a result of additional population growth in the County, as the resident population is the primary user of convenience centers and other solid waste programs. TA is told that Other Charges and the Recycling Rebate expenditures are fixed expenses. As discussed under revenues, the Litter Grant is not factored.

#### Solid Waste Fund Expenditures Knox County, Tennessee

Cost	FY99 Budget	Fixed Portion	Variable Portion	Projection Methodology	LOS Standard
Agricultural Extension-Compost	\$42,490	\$42,490	\$0	Fixed	\$0.00
Solid Waste Administration	\$144,161	\$97,411	\$46,750	Population	\$0.13
Tire Transfer Program	\$273,540	\$0	\$273,540	Population	\$0.75
Convenience Centers	\$1,784,590	\$49,481	\$1,735,109	Population	\$4.75
Recycling Program	\$175,492	\$39,622	\$135,870	Population	\$0.37
Other Charges	\$120,002	\$120,002	\$0	Fixed	\$0.00
Household Hazardous Waste	\$82,500	\$0	\$82,500	Housing Units	\$0.49
Recycling Rebate	\$48,968	\$48,968	\$0	Fixed	\$0.00
Litter Grant	\$155,580	\$155,580	\$0	Not Factored	See Text
Litter Grant-County	\$60,000	\$60,000	\$0	Not Factored	See Text
<b>Total</b>	<b>\$2,887,323</b>	<b>\$613,554</b>	<b>\$2,273,769</b>		<b>\$6.48</b>

## IX. HIGHWAY FUND

The Highway Fund is used 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.

### A. Revenues

The table below shows Highway Fund revenues and their allocation methodology. These revenues will increase with additional development in Knox County. As additional retail space is constructed to serve new countywide population growth in the unincorporated County, the amount of Local Option Sales Tax will increase. Therefore, the FY99 Local Option Sales Tax (\$2,159,500) is divided by the current amount of retail space (4,712,224 sq. ft.), resulting in revenue of \$.46 per square foot. Statutory Taxes and State revenues are expected to increase with population and Other Local Revenues is considered a fixed revenue source.

#### Highway Fund Revenues Knox County, Tennessee

Cost	FY99 Budget	Fixed Portion	Variable Portion	Projection Methodology	LOS Standard
County Local Option Tax	\$2,159,500	\$0	\$2,159,500	Per Square Foot	\$0.46
Statutory Taxes	\$1,576,000	\$0	\$1,576,000	Population	\$4.31
Other Local Revenues	\$2,000	\$2,000	\$0	Fixed	\$0.00
State of Tennessee	\$4,999,882	\$493,000	\$4,506,882	Population	\$12.33
<b>Total</b>	<b>\$8,737,382</b>	<b>\$495,000</b>	<b>\$8,242,382</b>		<b>\$17.10</b>

### B. Operating Expenditures

The table below summarizes Highway Fund expenditures by activity. These expenditures total \$8,765,693 in FY99. Highway Fund expenditures will increase as a result of additional road miles added to the County road system.

#### Highway Fund Expenditures Knox County, Tennessee

Cost	FY99 Budget	Fixed Portion	Variable Portion	Projection Methodology	LOS Standard
Administration	\$224,314	\$144,634	\$79,680	Per Lane Mile	\$39.84
Highway & Bridge Maintenance	\$6,658,178	\$514,047	\$6,144,131	Marginal	See Text
Engineering	\$445,696	\$245,872	\$199,824	Population	\$0.55
Traffic Control	\$577,005	\$37,339	\$539,666	Per Lane Mile	\$269.83
Other Charges	\$184,500	\$184,500	\$0	Fixed	\$0.00
Capital Outlay	\$235,000	\$235,000	\$0	Fixed	\$0.00
Bridge Construction	\$441,000	\$441,000	\$0	Not Factored	See Text
<b>Total</b>	<b>\$8,765,693</b>	<b>\$1,802,392</b>	<b>\$6,963,301</b>		<b>\$310.22</b>

#### 1. Marginal Operating Costs

- a. Highway & Bridge Staffing

There are approximately 2,000 miles of road in the County road system. In order to project the marginal personnel cost increases that will result as additional road mileage is added to the County system, TA has documented the current level of service in terms of mileage maintained by type of employee. For example, there are currently 9 Heavy Equipment Operators. For purposes of the fiscal impact analysis it is assumed that one new Heavy Equipment Operator is hired for every additional 222 miles of road (2,000 miles divided by 9). It is assumed these personnel are hired at level I, with a salary/benefits package of \$33,106. There are currently 16 Light Equipment Operators. In the same fashion, it is assumed that one new Light Equipment Operator is hired for every additional 125 miles of road (2,000 miles divided by 16). It is assumed these personnel are hired at level I, with a salary/benefits package of \$27,125. These assumptions, as well as those for Truck Drivers and Laborers are contained in the table below.

**Marginal Highway & Bridge Personnel Assumptions**

<b>Position</b>	<b>FY99 Positions</b>	<b>FY99 Avg. Salary*</b>	<b>FY99 LOS</b>
Heavy Equipment Operators	9	\$33,106	1 per 222 miles
Light Equipment Operators	16	\$27,125	1 per 125 miles
Truck Drivers	21	\$26,143	1 per 95 miles
Laborers	19	\$22,352	1 per 105 miles

\*Includes benefits

b. Maintenance Cost Per Mile

In addition to staffing cost, the FY99 budget contains \$4,485,225 in non-salary operating expenditures for road maintenance. When this is compared to the 2,000 miles of road in the County system, the current maintenance cost per mile is \$2,243.

## X. SCHOOL CONSTRUCTION FUND

The School Construction Fund is used to account for the Board of Education capital improvement program. The County School System operates 52 elementary schools, 16 middle schools, and 17 high schools.

### A. Revenues

The table below shows School Construction Fund revenues and their allocation methodology. These revenues will increase with additional residential and retail development in Knox County. For example, as new residential units and nonresidential square footage is constructed, the amount of Property Taxes received will increase. Therefore, the current tax rate of \$1.273 will be applied against the assessed value assumptions for new development. Local Option Sales Tax will increase on a square foot basis of \$1.09. This calculation is based on the amount of Sales Tax divided by the current amount of retail space in all of Knox County (12,622,819).

**School Construction Fund Revenues  
Knox County, Tennessee**

Revenue	Amount	Allocation Methodology	LOS Standard
Property Taxes	\$111,639	Per \$100 Asses. Value	\$1.273
Local Option Sales Tax	\$13,699,000	Per Retail Square Foot	\$1.09
<b>Total</b>	<b>\$13,810,639</b>		

### B. Capital Expenditures

In order to project the need for new schools in Knox County, TA will utilize a two-tiered approach. First, based on discussions with Board of Education staff, TA will direct enter growth-related schools contained in the adopted Capital Improvements Plan into the fiscal impact model. Secondly, once these facilities are constructed the fiscal impact model will monitor rated capacity and enrollments within each type of school. Whenever, enrollment exceeds 110% of capacity within a school, the model will then construct a school based on prototype assumptions and the increase in system capacity provided by the facility will then be added to the calculations.

#### 1. Growth-Related Schools FY 1999 to FY 2003

The FY99 Capital Improvements Plan contains four school construction projects necessary to serve new growth in Knox County. These projects include one elementary school, a middle school and a high school. The table below contains detailed information regarding the County's share of the capital costs, capacities, and year facility goes on line.

**Growth-Related Schools Facilities, FY1999 to FY2003**

School	Capital Cost	Year Constructed	Capacity
Northwest Elementary	\$13,700,000	2001	800
Bearden High School Land	\$840,000	1999	N/A
Bearden High School Expansion	\$12,000,000	2000	200
West Middle School	\$17,880,000	1999	1,200

Source: FY99 Capital Improvements Program

a. School Capital Needs 2003-2020

In order to forecast school facility needs past 2003, TA will design the FISCALS model to automatically keep track of total school system capacity by type of school (i.e. elementary, middle, and high). Whenever total system capacity exceeds 110%, the FISCALS model will automatically begin the three-year process of bringing a new school online, based on the following prototype assumptions. *(It is recognized that there may be other ways of accommodating new students without constructing new stand-alone facilities, such as expansion of existing facilities. In addition, it should be noted that individual school costs may be higher or lower depending on the circumstances.)*

**Prototype New School Assumptions  
Knox County, Tennessee**

School	Rated Capacity	Cost	Financing Method
Elementary	800	\$14,600,000	20-Year Bond
Middle	1,200	\$26,250,000	20-Year Bond
High	1,600	\$40,584,000	20-Year Bond

The information contained in the table below will be used in the fiscal impact model as the base point from which to add increased enrollment. This information was obtained from the Knox County Board of Education.

**School Enrollments and Capacities  
Knox County, Tennessee**

Type	Capacity	Enrollment	Utilization
Elementary	31,872	24,836	78%
Middle	13,143	12,023	91%
High	21,098	15,495	73%
<b>Total</b>	<b>66,113</b>	<b>52,354</b>	<b>79%</b>





## XI. RECREATION CONSTRUCTION FUND

The Recreation Construction Fund is used to account for Parks and Recreation capital expenditures. The County Park system includes neighborhood and community parks that primarily serve the unincorporated County population, and regional parks that serve the entire County, as well as surrounding Counties.

### A. Revenues

The only dedicated revenue for the Recreation Construction Fund is Local Option Sales Tax. This revenue will increase with additional development in Knox County. As additional retail space is constructed to serve new population growth in the unincorporated County, the amount of Local Option Sales Tax will increase. Therefore, the FY99 Local Option Sales Tax (\$200,000) is divided by the current amount of retail space (4,712,224 sq. ft.), resulting in revenue of \$.042 per square foot.

**Recreation Construction Fund Revenue  
Knox County, Tennessee**

Revenue	Amount	Allocation Methodology	LOS Standard
Local Option Sales Tax	\$200,000	Per Square Foot	\$0.042

### B. Capital Expenditures

In order to project the need for new parks in Knox County, TA will utilize a three-tiered approach. First, based on discussions with Parks and Recreation staff, TA will direct enter the *land costs* for growth-related parks contained in the adopted Capital Improvements Plan into the fiscal impact model. Only land will be factored for two reasons, the first being because parkland is typically purchased in a given year and development of fields etc. comes one to three years later. And the second is, given the fact that the County constructs facilities such as baseball fields and tennis courts on both County-owned parkland as well as school property and developer contributed property, the projection of the need for these facilities will be more realistic.

After the growth-related parkland is purchased, the fiscal impact model will monitor population thresholds for community, district and regional parks to the year 2020 and will "purchase" additional parkland based on prototype assumptions once thresholds are reached. Finally, thresholds will be monitored for facilities such as baseball fields, basketball courts, tennis courts, etc. Once thresholds are reached, the model will "build" the necessary facilities based on prototype assumptions.

#### I. Neighborhood Parks

Neighborhood or close to home parks are the smallest park type in Knox County. The County currently has approximately 237 acres of neighborhood parkland. These parks are typically in the five-acre range and are usually located on school property or on land provided during the subdivision process. Therefore, for purposes of the fiscal impact analysis it will be assumed that Knox County will not incur land costs for neighborhood parks. However, it is assumed

the County will incur capital costs for providing facilities such as baseball fields, tennis courts, etc. This is discussed further in section 5 below.

**2. Community Parks**

Knox County currently operates 15 community parks consisting of approximately 426 acres. Community parks are larger in size, primarily serve the unincorporated County and serve a broader purpose than neighborhood parks. Their purpose is to meet the recreation needs of several neighborhoods or large sections of the community. The table below shows growth-related community park purchases contained in the current CIP that will be direct entered into the fiscal impact model. These purchases total \$1,550,000 and comprise 76 acres.

**Growth-Related Community Parkland in FY99-FY03 CIP**

Park	Land Cost	Year Purchased	Acres To Maintain
East Bridge River Park	\$200,000	2000	20
Sports Complex	\$500,000	1999	25
Nicholas Ball/Karns Park	\$300,000	2000	10
Halls Greenway Park	\$200,000	1999	1
French Broad	\$350,000	2002	20
<b>Total</b>	<b>\$1,550,000</b>		<b>76</b>

When the number of community parks (15) is compared to the current unincorporated County population estimate of 197,772, the resulting level of service is 1 community park for every 13,184 persons. After the direct entry parks have been incorporated into the fiscal impact model, the model will then purchase land to ensure the current level of service is maintained. The parkland purchase cost will be based on the prototype assumptions contained in the table below, provided by the Parks and Recreation Department.

**Prototype Assumptions for Community Parkland**

Acres	Cost per Acre	Total Land Cost
20	\$12,500	\$250,000

**3. District Parks**

Knox County currently operates 2 County-owned district parks, consisting of approximately 282 acres. District parks are generally over 100 acres in size, are located as to serve residents from several communities, and primarily serve the unincorporated County. Their purpose is to meet the recreation needs of several neighborhoods or large sections of the community.

When the number of district parks is compared to the current unincorporated County population estimate of 197,772, the resulting level of service is 1 district park for every 98,886 persons. After the direct entry parks have been incorporated into the fiscal impact model, the model will then purchase land to ensure the current level of service is maintained. The parkland purchase cost will be based on the prototype assumptions contained in the table below, provided by the Parks and Recreation Department.

**Prototype Assumptions for District Parkland**

Acres	Cost per Acre	Total Land Cost
150	\$10,000	\$1,500,000

**4. Regional Parks**

Knox County currently operates 1 County-owned regional park, consisting of approximately 500 acres. Regional parks are generally over 500 acres in size, are located as to serve residents from the *entire* County. The table below shows growth-related regional park purchase contained in the current CIP that will be direct entered into the fiscal impact model. This purchase totals \$600,000 and comprises 500 acres.

**Growth-Related Regional Parkland in FY99-FY03 CIP**

Park	Land Cost	Year Purchased	Acres To Maintain
North Natural Area Park	\$600,000	2003	500

**5. Recreation Facilities**

The County has many recreational facilities such as ballfields, tennis courts, basketball courts, etc. that are located on both County-owned parkland and neighborhood parks located on school properties and developer donated land. The table below shows the current level of service for each of these facilities.

**Recreation Facility Levels of Service (LOS)**

Facility	Facilities	LOS
Baseball Fields	35	1 per 5,650 residents
Basketball Courts	32	1 per 6,180 residents
Football Fields	13	1 per 15,213 residents
Soccer Fields	40	1 per 4,944 residents
Softball Fields	48	1 per 4,120 residents
Tennis Courts	36	1 per 5,494 residents
Swimming Pools	2	1 per 98,886 residents

As discussed earlier, the model will "build" these facilities when each of the thresholds is reached. It is assumed that in order to maintain the current level of service the facility must be built. There is no assumption as to whether the facility is built on County-owned parkland or not. The facility cost will be based on the prototype assumptions contained in the table below, provided by the Parks and Recreation Department.

**Prototype Assumptions for Recreation Facilities**

<b>Facility</b>	<b>Cost</b>
Baseball Fields	\$75,000
Basketball Courts	\$10,000
Football Fields	\$75,000
Soccer Fields	\$75,000
Softball Fields	\$75,000
Tennis Courts	\$30,000
Swimming Pools	\$1,000,000

## XII. GENERAL DEBT FUND

### A. Revenues

The table below shows General Debt Fund revenues and their allocation methodology. Property Tax revenue will increase with additional residential and nonresidential development in Knox County. Other Local Revenues is comprised of interest from County funds. In order to project this revenue, it is assumed that this revenue source will always comprise 16% of total fund revenues, its current percentage. Revenues from the School Construction Fund are transferred annually to the General Debt Fund to service Board of Education debt. For purposes of the fiscal impact study, these transfers will not be factored in the General Debt Fund since School Construction revenues and expenditures are factored in the School Construction Fund.

**General Debt Fund Revenues  
Knox County, Tennessee**

Revenue	Amount	Allocation Methodology	LOS Standard
Property Taxes	\$12,521,423	Per \$100 Asses. Value	\$0.256
Other Local Revenues	\$5,500,000	Current % of Total Fund Revs/	16%
Operating Transfers	\$15,919,225	Not Factored	See Text
<b>Total</b>	<b>\$33,940,648</b>		

### B. Capital Expenditures

#### 1. General Government

With the construction of a new County Judicial Center, there shouldn't be a need for additional General Government office space, as it is assumed that General Government departments will be able to utilize the space vacated by current Judicial functions in the existing County Administration Building. Therefore no capital cost is assumed in the fiscal impact analysis.

#### 2. Health

The Health Department currently operates out of the Health Department Administration Building and five clinics/satellite locations. The Health Department Administration Building was recently expanded and now occupies 130,000 square feet. Conversations with the Health Department indicate that if population growth continues at its current rate over the next twenty years, additional space will be needed. Therefore, to project the number of square feet needed, the current 130,000 square feet of space is compared to the 1998 population estimate of 365,626, which results in a level of service standard of .355 square feet per capita. This standard will be applied to the projected population growth in each scenario to estimate the amount of space needed to maintain the current level of service. The amount of space needed is shown in the table below. It is assumed this additional space is in the form of an addition, with a capital cost per square foot of \$76.17. This square foot cost was obtained using the Marshall & Swift Valuation Service, assuming Average Class C construction.

**Health Space Needs to 2020  
Knox County, Tennessee**

<b>Scenario</b>	<b>Population Increase</b>	<b>Space Needed</b>
Current Trends	167,814	59,574
Slowed Growth	125,860	44,680
Higher Multifamily	163,693	58,111
Higher Retail	167,814	59,574
Higher Employment	167,814	59,574

*The methodology used to calculate the need for additional clinic space has yet to be determined.*

**3. Judicial**

*This information is forthcoming from Kathy Hamilton.*

**4. Library**

The Knox County Public Library System operates a main Library and 17 branch locations throughout the County. When the total square footage of the Library System is compared to the current County population estimate of 365,626, there is .412 square feet of Library space per capita in Knox County. When this level of service standard is applied to the net increases in population for each scenario the following space is required.

**Library Space Needs to 2020  
Knox County, Tennessee**

<b>Scenario</b>	<b>Population Increase</b>	<b>Space Needed</b>
Current Trends	167,814	69,139
Slower Growth	125,860	51,855
Higher Multifamily	163,693	67,441
Higher Retail	167,814	69,139
Higher Employment	167,814	69,139

There are several expansions and a new branch library (Bonny Kate) in the current County Capital Improvement Plan that will be constructed to serve new residential growth in Knox County. In addition, if residential growth continues at its current pace, the Library anticipates the need for a new branch location in southwest Knox County and the expansion of an existing branch by 2020. These projects will add 69,200 square feet to the Library System, approximately the same amount necessary to maintain the current level of service under the Current Trends, Higher Retail and Higher Employment scenarios. Under the Slowed Growth scenario, it is assumed that Southwest Branch is not constructed and the Future Branch expansion is reduced in size by 2,000 square feet. Under Higher Multifamily it is assumed the Future Branch expansion is reduced by 2,000 square feet. These capital projects are shown in the table below, along with year they are assumed to open and new growth's share of the project cost. For example if an existing branch is 4,000 square feet and a replacement branch is constructed that is 10,000 square feet, new growth's share of the cost

is for the 6,000 square feet. All Library construction is assumed to be bond financed over 20 years at an interest rate of 5.1%.

**Library Capital Projects-Current Trends Population##  
Knox County, Tennessee**

Facility	New Sq. Ft.	Year	Cost#
Fountain City Branch*	6,000	2005	\$1,404,883
Central Library*	8,500	2001	\$1,850,162
Powell Branch*	6,000	2004	\$1,343,554
Halls Branch*	6,000	2002	\$1,141,111
West Knoxville Branch*	9,000	2000	\$1,359,622
Bonny Kate Branch**	6,000	2001	\$1,182,231
Southwest Branch**	15,000	2008	\$1,901,852
Karns Branch*	5,700	2001	\$1,035,758
Future Branch Expansion I*	7,000	2014	\$1,567,479
<b>Total</b>	<b>69,200</b>		<b>\$12,786,652</b>

\*Expansion to existing branch

\*\*New branch

#Cost has been prorated to reflect only new growth's share of facility cost

##Since the population increase is less under Slower Growth, Southwest Branch will not be constructed and the Future Branch expansion is reduced to 5,000 sq. ft. Future Branch is reduced to 5,000 square feet under Higher Multifamily as well.

**5. Roads**

*This information is forthcoming.*

**6. Sheriff**

The table below shows all the *one-time costs* associated with a new deputy sheriff, as well as vehicle costs. One time costs include initial uniform issue and related equipment, weapon and ammunition. The County is currently issuing a vehicle per sworn deputy involved in patrol, civil, and investigative functions. Vehicles are assumed to have a useful life of four years with replacements being purchased in the fiscal impact model. Each vehicle is also assumed to have annual operating costs of \$2,200 for gas and \$1,200 for maintenance.

**Capital Equipment Costs  
Knox County Sheriff's Office**

Item	Cost
Vehicle*	\$21,500
Radios	\$5,300
Uniform**	\$500
Weapon & Vest**	\$675
Other Small Equipment**	\$300
Onboard Computer***	\$1,400

\*Useful life of four years

\*\*One-time expense

\*\*\*Useful life of four years



**7. Solid Waste**

The Knox County Solid Waste Division contracts landfill operations out to a private vendor. However, the County does operate convenience centers for recycling. The Solid Waste Division has several capital projects planned to serve not only the existing County development base, but new growth as well. These projects include a wood processing facility and eight new convenience centers. In order to determine new growth's share of these capital facilities, the total cost of the facility is multiplied times the percentage of population increase from 1998 to 2020. For example, the Wood Processing Facility is projected to cost \$1,000,000. Under the Current Trend scenario population is projected to increase by 167,814 persons, or 46%. Therefore, the capital cost of 1,000,000 is multiplied by 46% to derive new growth's share of the Wood Processing Facility.

**Solid Waste Capital Expenditures**

<b>Facility</b>	<b>Cost</b>	<b>Year Constructed</b>	<b>Slowed Growth</b>	<b>Other Scenarios*</b>
Wood Processing Facility	\$1,000,000	1999 and 2000	\$344,233	\$458,977
Convenience Center 1	\$500,000	1999	\$172,116	\$229,489
Convenience Center 2	\$500,000	2000	\$172,116	\$229,489
Convenience Center 3	\$500,000	2001	\$172,116	\$229,489
Convenience Center 4	\$500,000	2002	\$172,116	\$229,489
Convenience Center 5	\$500,000	2003	\$172,116	\$229,489
Convenience Center 6	\$500,000	2004	\$172,116	\$229,489
Convenience Center 7	\$500,000	2005	\$172,116	\$229,489
Convenience Center 8	\$500,000	2006	\$172,116	\$229,489

\*The Current Trends, Multifamily, Higher Retail and Higher Employment scenarios are treated alike since they all essentially experience the same population growth.