



A Defined Benefit
Actuarial Valuation

For:

**Knox County Employee Benefit System
Knox County Board of Education
Retirement Plan**

As of:

January 1, 2012

Prepared by:
The USI Consulting Group



USI Consulting Group
95 Glastonbury Boulevard, Suite 102
Glastonbury, CT 06033-6503
www.usi.biz
Phone: 860.633.5283
Fax: 860.368.2112

February 24, 2012

CONFIDENTIAL

Knox County Employee Benefit System

RE: KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN

Gentlemen:

We are pleased to present our Actuarial Valuation Report for the Plan Year beginning January 1, 2012. A summary of the principal results of the report is provided for your convenience on pages one through three. Details supporting the cost calculations are also included, as well as other information designed to assist you and your accountants in preparing your reports.

The suggested employer contribution for the fiscal year is \$1,183,029 calculated as payable on 7/1/2012.

We would be happy to answer any questions you may have regarding this report.

Sincerely,

USI CONSULTING GROUP

Bob Cross, ASA, MAAA, FCA
President, Southeast

TABLE OF CONTENTS

Section I
Valuation Summaries

| | |
|---|----|
| PRINCIPAL RESULTS OF THE VALUATION | 1 |
| EXECUTIVE SUMMARY | 2 |
| FINANCIAL STATEMENT AS OF 1/1/2012 | 4 |
| DETERMINATION OF VALUATION ASSETS AS OF 1/1/2012 | 5 |
| VALUATION RESULTS AS OF 1/1/2012 | 6 |
| CONTRIBUTION REQUIREMENTS AS OF 12/31/2012 | 7 |
| PARTICIPANT DATA AND RECONCILIATION OF PARTICIPANT STATUS | 8 |
| SUMMARY OF PLAN PROVISIONS | 9 |
| SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS | 12 |

Section II
Accounting Information

| | |
|--|----|
| ACCUMULATED PLAN BENEFITS – FASB ASC 960 (formerly FAS 35) | 14 |
| GOVERNMENT ACCOUNTING STANDARDS BOARD STATEMENT No. 25 | 15 |
| GOVERNMENT ACCOUNTING STANDARDS BOARD STATEMENT No. 27 | 16 |

Section III
Employee Detail

| | |
|--|--|
| Exhibit I | |
| EMPLOYEE CENSUS AS OF 1/1/2012 | |
| Exhibit II | |
| TERMINATED VESTED EMPLOYEE BENEFITS AS OF 1/1/2012 | |
| Exhibit III | |
| RETIRED EMPLOYEE BENEFITS AS OF 1/1/2012 | |
| Exhibit IV | |
| AGE AND SERVICE DISTRIBUTION AS OF 1/1/2012 | |

**KNOX COUNTY EMPLOYEE BENEFIT SYSTEM
KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN**

VALUATION AS OF 1/1/2012

PRINCIPAL RESULTS OF THE VALUATION

Below is a summary of the principal results of this year's valuation compared with the previous valuation. Amounts for each valuation period reflect the actuarial cost method, assumptions and plan benefits in effect at that time.

| | <u>As of January 1, 2011</u> | <u>As of January 1, 2012</u> |
|---|----------------------------------|----------------------------------|
| <u>CONTRIBUTION LIMITATIONS</u> | | |
| Recommended Contribution | \$ 1,046,949 | \$ 1,183,029 |
| Percentage of Payroll | 127.17% | 360.22% |
| Expected Employee Contribution | \$ 38,380 | \$ 15,269 |
| <u>SUPPORTING INFORMATION</u> | | |
| Market Value of Assets | \$ 66,954,807 | \$ 61,329,117 |
| Actuarial Value of Assets | \$ 70,428,532 | \$ 65,150,937 |
| Present Value of Accumulated Benefits | \$ 77,936,758 | \$ 77,519,703 |
| Funding Ratio – Actuarial Value of Assets as a Percentage of Present Value of Accumulated Benefits | 90.4% | 84.0% |
| Funding Ratio – Market Value of Assets as a Percentage of Present Value of Accumulated Benefits | 85.9% | 79.1% |
| Funding Ratio Discount Rate | 7.5% | 7.5% |
| Number of Lives Included in the Valuation | 482 | 475 |
| Present Value of All Future Benefits | \$ 78,340,833 | \$ 77,637,278 |

**KNOX COUNTY EMPLOYEE BENEFIT SYSTEM
KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN**

VALUATION AS OF 1/1/2012

EXECUTIVE SUMMARY

Purpose and Scope

The principal purposes of this actuarial valuation report are:

1. To present our calculation of the Plan contributions under the Knox County Employee Benefit System funding policy,
2. To review plan experience during the year ended December 31, 2011, and the funded status of the plan as of January 1, 2012, and
3. To determine the funded status of accumulated plan benefits, accumulated vested benefits, and plan funding progress in accordance with Governmental Accounting Standards Board Statements No. 25, 27 and other Financial Accounting Standards.

The valuation is based upon employee data and financial information provided by Knox County. This data was not audited or otherwise verified by us other than for tests of reasonable consistency with prior year data.

Actuarial Methods and Assumptions

For the January 1, 2012 plan year, all assumptions remained the same as those used in the January 1, 2011 valuation, except that the period over which the Unfunded Accrued Liability is amortized is now 20 years.

Plan Experience

During 2011 the market value of plan assets decreased from \$66,954,807 to \$61,329,117 with an investment return of approximately 0.35%. This investment performance was below the 7.5% assumption, creating a market value loss of about \$4,579,000. The actuarial value of plan assets decreased from \$70,428,532 to \$65,150,937 with an investment return of approximately 0.85%. This resulted in an asset loss of about \$4,491,000. The plan also experienced a liability gain of approximately \$236,000, resulting in a net actuarial loss of about \$4,255,000.

Recall that the asset smoothing method recognizes each year's investment gains and losses over a five year period. See page 5 for more details of the method. In this way, the actuarial value of assets methodology smoothes out much of the volatility of annual changes in the market value of assets. Note that in a future year, the smoothed actuarial value of assets could be less than the market value.

Contribution Requirements

The suggested employer contribution for the 2012 fiscal year is \$1,183,029. Please see page 7 for more details.

**KNOX COUNTY EMPLOYEE BENEFIT SYSTEM
KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN**

VALUATION AS OF 1/1/2012

EXECUTIVE SUMMARY

(Continued)

Funding Status

The plan's funding ratio as shown on page 1 decreased from 90.4% in 2011 to 84.0% in 2012.

This report has been prepared in accordance with generally accepted actuarial standards and procedures, and conforms to the Guidelines for Professional Conduct of the American Academy of Actuaries. It is based upon the employee and financial data submitted to USI Consulting Group by the plan sponsor and the retirement plan provisions as outlined herein.

I, Dennis E. Jacobs, FSA, EA, MAAA, am a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

USI CONSULTING GROUP



Dennis E. Jacobs, FSA, EA, MAAA
Vice President and Actuary



Jaime Packer, ASA
Team Leader and Actuary

**KNOX COUNTY EMPLOYEE BENEFIT SYSTEM
KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN**

FINANCIAL STATEMENT AS OF 1/1/2012

| ASSETS | <u>1/1/2011</u> | <u>1/1/2012</u> |
|--|-----------------------|-----------------------|
| Cash (and money market funds) | 0 | 0 |
| Accrued Income | 0 | 0 |
| Receivables | 0 | 0 |
| Investments | | |
| Bond Funds | 0 | 0 |
| Corporate (debt and equity instruments) | 67,009,745 | 61,421,035 |
| Real Estate Equity Fund | 0 | 0 |
| Other - Cash Equivalents | <u>0</u> | <u>0</u> |
| Total Investments | 67,009,745 | 61,421,035 |
| Buildings & Other Property used in Plan Operation | 0 | 0 |
| Insurance Contracts | 0 | 0 |
| Other Assets | <u>0</u> | <u>0</u> |
| Total Assets | 67,009,745 | 61,421,035 |
| LIABILITIES AND NET ASSETS | | |
| Payables | 54,938 | 91,918 |
| Acquisition Indebtedness | 0 | 0 |
| Other Liabilities | <u>0</u> | <u>0</u> |
| Total Liabilities | 54,938 | 91,918 |
| NET ASSETS | 66,954,807 | 61,329,117 |
| STATEMENT OF RECEIPTS AND DISBURSEMENTS | | |
| Net Assets at Beginning of Year | | 66,954,807 |
| Contributions Received or Receivable | | |
| Employer | 1,046,949 | |
| Employees | 64,602 | |
| Others | 0 | |
| Total Contributions | 0 | 1,111,551 |
| Dividends and Income | | 632,773 |
| Other Income | | 0 |
| Net Realized Gain (Loss) | | 2,595,319 |
| Net Unrealized Gain (Loss) | | <u>(3,004,520)</u> |
| Total Income | | 1,335,124 |
| Distribution of Benefits | | |
| Directly to Participants or Beneficiaries | 6,111,839 | |
| Other | 0 | 6,111,839 |
| Fees and Commissions | | 848,975 |
| Other Expenses | | <u>0</u> |
| Total Expenses | | 6,960,814 |
| Net Income (loss) | | <u>(5,625,690)</u> |
| NET ASSETS AT END OF YEAR | | 61,329,117 |

**KNOX COUNTY EMPLOYEE BENEFIT SYSTEM
KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN**

DETERMINATION OF VALUATION ASSETS AS OF 1/1/2012

1. ASSET GAIN/(LOSS) AS OF 1/1/2012

| | |
|---|------------------|
| (1) Expected market value of assets as of 1/1/2012: | |
| (a) Market value of assets as of 1/1/2011 | \$ 66,954,807 |
| (b) Expected return on assets at 7.5% | \$ 5,021,611 |
| (c) Contributions | \$ 1,111,551 |
| (d) Benefit Payments and Expenses | \$ (6,960,814) |
| (e) Net interest on (c) - (d), weighted for timing | <u>(219,347)</u> |
| (f) Total: (a) + (b) + (c) + (d) + (e) | \$ 65,907,808 |
| | |
| (2) Actual Market value of assets as of 1/1/2012: | \$ 61,329,117 |
| | |
| (3) Asset gain/(loss) as of 1/1/2012: (2) - (1)(f) | \$ (4,578,691) |

2. DETERMINATION OF VALUATION ASSETS AS OF 1/1/2012

| | | | |
|---|--------------------|---------------------------|--------------------|
| (1) Market value of assets as of 1/1/2012: | | | |
| | \$ 61,329,117 | | |
| | | | |
| (2) Recognition of asset gain/(loss) over a five year period: | | | |
| Year Ending | Asset | Portion Not | Amount |
| <u>December 31</u> | <u>Gain/(Loss)</u> | <u>X Yet Recognized =</u> | <u>Deferred</u> |
| 2011 | \$ (4,578,691) | 4/5 | \$ (3,662,952) |
| 2010 | \$ 4,103,355 | 3/5 | \$ 2,462,013 |
| 2009 | \$ 7,573,242 | 2/5 | \$ 3,029,297 |
| 2008 | \$ (28,250,884) | 1/5 | \$ (5,650,177) |
| Total: | | | \$ (3,821,819) |
| | | | |
| (3) Accrued contributions as of 1/1/2012: | | | \$ - |
| | | | |
| (4) Valuation assets as of 1/1/2012: (1) - (2) + (3) | | | \$ 65,150,937 |

3. VALUATION ASSETS AS OF 1/1/2012

| | |
|--|-------------------|
| (1) Valuation assets as of 1/1/2011: (1) + (2) + (3) + (4) + (5) | \$ 70,428,532 |
| (2) Contributions, including receivables: | \$ 1,111,551 |
| (3) Benefit payments: | \$ (6,111,839) |
| (4) Plan expenses: | \$ (848,975) |
| (5) Return on assets: | <u>\$ 571,667</u> |
| (6) Valuation assets as of 1/1/2012: (1) + (2) + (3) + (4) + (5) | \$ 65,150,937 |
| (7) 110% of Market Value | \$ 67,462,029 |
| (8) Final Actuarial Value of Assets, no more than (7). | \$ 65,150,937 |

**KNOX COUNTY EMPLOYEE BENEFIT SYSTEM
KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN**

VALUATION RESULTS AS OF JANUARY 1, 2012

1. PRESENT VALUE OF FUTURE BENEFITS

The value of all projected retirement, death, disability, and vested termination benefits expected to be paid to all current plan participants, discounted to the valuation date with interest, mortality, withdrawal, and disability decrements.

| | <u>Lives</u> | <u>Retirement</u> | <u>Death</u> | <u>Withdrawal</u> | <u>Disability</u> | <u>Total</u> |
|------------|--------------|-------------------|--------------|-------------------|-------------------|-------------------|
| Active | 12 | 4,608,062 | 4,229 | 83,988 | 67,469 | 4,763,748 |
| Terminated | 9 | 570,928 | 5,185 | 0 | 0 | 576,113 |
| Retired | <u>454</u> | <u>72,297,417</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>72,297,417</u> |
| Totals | 475 | 77,476,407 | 9,414 | 83,988 | 67,469 | 77,637,278 |

2. ENTRY AGE ACCRUED LIABILITY

The portion of the present value of future benefit attributable to prior normal costs.

| | |
|------------|-------------------|
| Active | 4,741,820 |
| Terminated | 576,113 |
| Retired | <u>72,297,417</u> |
| Total | 77,615,350 |

3. ACTUARIAL VALUE OF ASSETS 65,150,937

4. UNFUNDED ACCRUED LIABILITY (2 - 3) 12,464,413

5. DEVELOPMENT OF CREDIT BALANCE

| | |
|---|-----------|
| (1) Minimum Contribution as of 7/1/2011 - prior year | 1,046,949 |
| (2) Actual Employer Contribution - 7/1/2010 - 6/30/2011 | 1,046,949 |
| (3) Interest on Employer Contribution | 0 |
| (4) Credit Balance (2 + 3 - 1) | 0 |

6. ENTRY AGE NORMAL COST

The amount required to fund the present value of benefits as a level percent of pay from entry age to retirement age.

| | |
|------------------------------------|---------------|
| A. Total Normal Cost | 18,178 |
| B. Expected Employee Contributions | <u>15,269</u> |
| C. Employer Normal Cost | 2,909 |

**KNOX COUNTY EMPLOYEE BENEFIT SYSTEM
KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN**

CONTRIBUTION REQUIREMENTS FOR PLAN YEAR ENDING DECEMBER 31, 2012

With recent experience, the Plan now shows an Unfunded Accrued Liability using the Individual Entry Age Normal cost method. The Recommended Employer contribution will be the Plan's Normal Cost reduced by Expected Employee Contributions (see pg. 6) plus a 20 year amortization of the Past Service Base in effect on January 1, 2012 (see below) reduced by the Plan's Credit Balance (also on page 6).

RECOMMENDED PLAN CONTRIBUTION

CHARGES:

| | | |
|---|------------|-----------|
| (1) Employer Normal Cost | | 2,909 |
| (2) Outstanding Charge Base | 12,464,413 | |
| (3) Amortization of Outstanding Charge Base | | 1,137,360 |
| (4) Credit Balance | | <u>0</u> |
| (5) Total Charges = (1) + (3) - (4), not less than zero | | 1,140,269 |
| (6) Interest Charge on (1) and (3) and (4) | | 42,760 |

Annual Contributions

| | <u>2011</u> | <u>2012</u> |
|--|-------------|-------------|
| Total Recommended Employer Contribution as of Beginning of the Plan Year | 1,009,107 | 1,140,269 |
| Total Recommended Employer Contribution as of Beginning of fiscal year starting July 1 | 1,046,949 | 1,183,029 |
| Expected Employee Contributions for the Plan Year | 38,380 | 15,269 |

AMORTIZATION SCHEDULE

| Description | Year Est. | Initial Amount | Outstanding Balance | Amortization Payment | Years Remaining |
|-------------------|-----------|----------------|---------------------|----------------------|-----------------|
| Past Service Base | 2012 | 12,464,413 | <u>12,464,413</u> | <u>1,137,360</u> | 20 |
| | | | 12,464,413 | 1,137,360 | |

**KNOX COUNTY EMPLOYEE BENEFIT SYSTEM
KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN**

PARTICIPANT DATA AS OF 1/1/2012

| | |
|--|----------|
| Active employees under assumed retirement age | |
| Number | 10 |
| Total annual compensation | 328,419 |
| Average accrued benefit | 2,097.37 |
| Average projected benefit | 2,360.47 |
| Average attained age | 59.54 |
| Average prior service | 37.49 |
| Other active and inactive employees | |
| Number | 2 |
| Average accrued benefit | 4,180.09 |
| Average attained age | 63.22 |
| Terminated deferred vested, deceased and disabled employees | |
| Number | 9 |
| Average accrued benefit | 468.16 |
| Average attained age | 59.56 |
| Retired employees, beneficiaries and contingent annuitants | |
| Number | 454 |
| Average monthly benefit | 1,179.14 |
| Average attained age | 69.25 |

RECONCILIATION OF PARTICIPANT STATUS

| | <u>Active</u> | <u>Inactive</u> | <u>Deferred Vested</u> | <u>Pay Status</u> | <u>Total</u> |
|------------------------|---------------|-----------------|----------------------------|-----------------------|--------------|
| Prior Valuation | 29 | 0 | 10 | 443 | 482 |
| Terminated - vested | 0 | 0 | 0 | 0 | 0 |
| Cashed Out | 0 | 0 | 0 | 0 | 0 |
| Death | (1) | 0 | 0 | (8) | (9) |
| Entered as Beneficiary | 0 | 0 | 0 | 2 | 2 |
| Retired | (16) | 0 | (1) | 17 | 0 |
| Rehired | 0 | 0 | 0 | 0 | 0 |
| Data Corrections | 0 | 0 | 0 | 0 | 0 |
| Current Valuation | 12 | 0 | 9 | 454 | 475 |

**KNOX COUNTY EMPLOYEE BENEFIT SYSTEM
KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN**

SUMMARY OF PLAN PROVISIONS

Effective Date

Shall mean for credited service July 1, 1987 and for all other purposes June 26, 1990.

**Eligibility
Participation**

Any person who is a "teacher" as defined by the Court of Appeals in its opinion of December 30, 1987 in the case of Knox County v. The City of Knoxville, et al, and who is entitled to maintain membership in a local pension system as a result of their membership in any applicable plan of the City of Knoxville Pension System on June 30, 1987, and who thereafter is employed as a result of the City of Knoxville ceasing to operate a separate school system and is so regularly employed by the Knox County Board of Education.

**Normal Retirement
Eligibility**

Each member shall be eligible to retire at age 62 or on the first day of any of the thirty-five months next following age 62.

Benefit

A monthly benefit payable for life, computed as of normal retirement date as one-twelfth of credited service multiplied by the sum of (A) and (B):

(A) Benefit Rate A times average base earnings

(B) Benefit Rate B times average excess earnings

Benefit Rate A and Benefit Rate B shall vary according to the member's last birthday at time benefit payments are to commence, as follows:

| <u>Age</u> | <u>Benefit Rate A</u> | <u>Benefit Rate B</u> |
|---------------|---------------------------|---------------------------|
| 62 or earlier | .75% | 1.50% |
| 63 | .78% | 1.58% |
| 64 | .84% | 1.66% |
| 65 or later | .88% | 1.76% |

This amount is then reduced by the benefit accrued under the applicable City of Knoxville retirement plan as of June 30, 1987.

**KNOX COUNTY EMPLOYEE BENEFIT SYSTEM
KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN**

**SUMMARY OF PLAN PROVISIONS
(Continued)**

| | |
|---|--|
| Minimum Benefit | The monthly benefit, including 50% of the primary Social Security benefit, shall not be less than \$10 per year of credited service, with a maximum of \$250. |
| Earnings | Total compensation |
| Base Earnings | That part of earnings in any calendar year which does not exceed \$4,800.00 per annum. |
| Excess Earnings | That part of earnings in any calendar year which are in excess of base earnings. |
| Credited Service | Years and completed calendar months of service as an employee of either the City of Knoxville or Knox County. |
| Average Earnings | A 3-year arithmetic average determined for the number of full calendar years of credited service during which the earnings were the highest, or number of full calendar years actually completed if less than 3. |
| Accrued Benefit | Normal retirement benefit based on service and compensation up to the determination date less that benefit accrued under the applicable City of Knoxville retirement plan as of June 30, 1987. |
| Early Retirement Eligibility | Completion of 25 years of credited service. |
| Benefit | Upon early retirement, a member may elect to receive either (a) a deferred monthly benefit equal to his accrued benefit commencing at normal retirement date, or (b) a reduced benefit equal to the actuarially equivalent benefit described in (a) above, commencing immediately. |
| Disability Not In Line of Duty Eligibility | Completion of 15 years of credited service. |
| Benefit | Accrued benefit, based on credited service at time of disablement, payable immediately, plus a lump sum equal to six times the accrued monthly benefit. |

**KNOX COUNTY EMPLOYEE BENEFIT SYSTEM
KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN**

**SUMMARY OF PLAN PROVISIONS
(Continued)**

| | |
|---|---|
| Disability in Line of Duty Eligibility | Disablement in the course of performance of duty as an employee. |
| Benefit | Accrued benefit, based on credited service projected to age 62, payable immediately and reduced by any workers' compensation benefits paid. |
| Death Benefit Eligibility | Completion of 15 years of credited service. |
| Benefit | 50% of the monthly benefit that the participant would have been entitled to if he/she had elected the 50% joint and survivor form of payment, payable at the earliest time benefits could have commenced to the participant. |
| Deferred Vested Eligibility | Completion of 10 years of credited service. |
| Benefit | A deferred monthly benefit equal to the accrued benefit commencing at normal retirement date, determined as of the date of termination, provided the member leaves his contributions in the fund. |
| Return of Employee Contribution | A minimum of employee contributions with interest is paid on death, termination, or retirement. |
| Normal Form of Annuity | Life Annuity |
| Optional Forms of Annuity | Certain and Life, Joint and Survivor, Cash Refund. Such options will be actuarially equivalent to a life annuity. |
| Employee Contributions | Each employee who is a member shall contribute to the fund an amount equal to (a) plus (b) where: (a) The contribution rate shall be 3 percent of base earnings, and (b) The contribution rate shall be 5 percent of excess earnings. |

**KNOX COUNTY EMPLOYEE BENEFIT SYSTEM
KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN
SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS**

ACTUARIAL COST METHOD

Individual Entry Age Normal Cost.

Under this method, the annual cost is equal to the normal cost, plus amortization of unfunded accrued liabilities over a fixed period of years selected within the minimum (10 years) and maximum (5 to 30 years) periods permitted by law.

The normal cost is the sum of individual normal costs, determined as a level percentage of compensation which would have been necessary to fund the employee's projected retirement, death and withdrawal benefits, from entry age (the age at which the employee would have entered the plan had it been in effect on his employment date), to his retirement age. Thus, the dollar normal cost is expected to increase with the salary projection assumption.

The actuarial accrued liability is the accumulation, based on the actuarial assumptions, of all assumed prior normal costs. Thus, it represents the amount of reserves, which would be held by the plan, had it always been in effect for the present group of participants and had plan experience followed that predicted by the actuarial assumptions. The unfunded accrued liability is the excess, if any, of the accrued liability over the plan assets.

Actuarial gains and losses arising from differences between plan experience and that predicted by the actuarial assumptions, as measured by the difference between actual and expected unfunded accrued liabilities, are amortized over 5 years.

ACTUARIAL ASSUMPTIONS

Post-Retirement

Mortality - 1983 Group Annuity Mortality Table for Males and Females

Investment Return - 7.5% per annum.

Assumed benefit increases - 3.00% per annum on the participant's original benefit

Pre-Retirement

Mortality - 1983 Group Annuity Mortality Table for Males and Females

Investment Return - 7.5% per annum.

Salary projection - 3.0% per annum.

**KNOX COUNTY EMPLOYEE BENEFIT SYSTEM
KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN**

**SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS
(Continued)**

ACTUARIAL ASSUMPTIONS (Continued)

Expense loading - None

Retirement age - 60 or immediately if older.

Disability rates - Rates set forth below.

Withdrawal rates - Rates set forth below.

| Age | Pre-retirement Decrement Rates | | | | | |
|-----|--------------------------------|--------|------------|--------|------------|--------|
| | Mortality | | Withdrawal | | Disability | |
| | Male | Female | Male | Female | Male | Female |
| 20 | 0.038% | 0.032% | 0.000% | 0.000% | 0.000% | 0.000% |
| 25 | 0.046% | 0.036% | 6.100% | 5.925% | 0.000% | 0.000% |
| 30 | 0.061% | 0.044% | 5.850% | 5.460% | 0.400% | 0.400% |
| 35 | 0.086% | 0.057% | 5.097% | 4.861% | 0.400% | 0.400% |
| 40 | 0.124% | 0.078% | 2.701% | 3.891% | 0.400% | 0.400% |
| 45 | 0.218% | 0.113% | 2.060% | 3.444% | 0.420% | 0.420% |
| 50 | 0.391% | 0.193% | 2.997% | 2.889% | 0.730% | 0.730% |
| 55 | 0.613% | 0.351% | 3.271% | 3.015% | 1.400% | 1.400% |
| 60 | 0.916% | 0.566% | 6.537% | 3.372% | 2.480% | 2.480% |

ASSET VALUATION

Each plan year's investment gain or loss is recognized over five years.

**KNOX COUNTY EMPLOYEE BENEFIT SYSTEM
KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN**

ACCUMULATED PLAN BENEFITS UNDER FAS ASC 960 (formerly FAS 35)

| Actuarial Present Values of Accumulated Plan Benefits (Accumulated Benefit Obligation): | <u>1/1/2011</u> | <u>1/1/2012</u> |
|--|-------------------|------------------|
| Vested Benefits | | |
| Participants currently receiving payments | 66,652,389 | 72,297,417 |
| Other Participants | | |
| Active Employees | 10,538,753 | 4,646,173 |
| Deceased and Disabled Employees | 0 | 0 |
| Deferred Vested Terminated Employees | <u>745,616</u> | <u>576,113</u> |
| Total - Other Participants | <u>11,284,369</u> | <u>5,222,286</u> |
| Total Vested Benefits | 77,936,758 | 77,519,703 |
| Nonvested Benefits | <u>0</u> | <u>0</u> |
| Total Actuarial Present Values of Accumulated Plan Benefits | 77,936,758 | 77,519,703 |
| | | |
| Discount Rate | 7.50% | 7.50% |

**KNOX COUNTY EMPLOYEE BENEFIT SYSTEM
KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN**

SCHEDULE OF FUNDING PROGRESS

| Actuarial Valuation | Actuarial Value of Assets | Actuarial Liability (AAL) Entry Age Normal <small>(Aggregate prior to 1/1/05)</small> | Unfunded AAL (UAAL) | Funded Ratio | Covered Payroll | UAAL as a Percentage of Covered Payroll |
|---------------------|---------------------------|--|---------------------|----------------|-----------------|---|
| <u>Date</u> | <u>(a)</u> | <u>(b)</u> | <u>(b - a)</u> | <u>(a / b)</u> | <u>(c)</u> | <u>((b - a) / c)</u> |
| 1/1/1997 | 31,532,498 | 31,532,498 | 0 | 100.00% | 16,518,534 | 0.00% |
| 1/1/1998 | 55,425,760 | 55,425,760 | 0 | 100.00% | 16,280,062 | 0.00% |
| 1/1/1999 | 62,622,721 | 62,622,721 | 0 | 100.00% | 15,714,131 | 0.00% |
| 1/1/2000 | 70,243,735 | 70,243,735 | 0 | 100.00% | 14,392,249 | 0.00% |
| 1/1/2001 | 69,634,862 | 69,634,862 | 0 | 100.00% | 14,009,264 | 0.00% |
| 1/1/2002 | 72,917,044 | 72,917,044 | 0 | 100.00% | 13,254,219 | 0.00% |
| 1/1/2003 | 71,458,839 | 71,458,839 | 0 | 100.00% | 12,286,006 | 0.00% |
| 1/1/2004 | 73,472,465 | 73,472,465 | 0 | 100.00% | 11,014,729 | 0.00% |
| 1/1/2005 | 74,889,828 | 82,120,286 | 7,230,458 | 91.20% | 7,595,733 | 95.19% |
| 1/1/2006 | 75,174,360 | 83,066,476 | 7,892,116 | 90.50% | 6,274,664 | 125.78% |
| 1/1/2007 | 84,154,462 | 84,362,290 | 207,828 | 99.75% | 5,236,764 | 3.97% |
| 1/1/2008 | 83,327,598 | 84,657,462 | 1,329,864 | 98.43% | 4,102,017 | 32.42% |
| 1/1/2009 | 61,496,011 | 83,991,358 | 22,495,347 | 73.22% | 2,018,191 | 1114.63% |
| 1/1/2010 | 69,493,440 | 79,131,091 | 9,637,651 | 87.82% | 1,050,650 | 917.30% |
| 1/1/2011 | 70,428,532 | 78,267,707 | 7,839,175 | 89.98% | 823,283 | 952.18% |
| 1/1/2012 | 65,150,937 | 77,615,350 | 12,464,413 | 83.94% | 328,419 | N/A |

SCHEDULE OF EMPLOYER CONTRIBUTIONS

| <u>Year Ended June 30</u> | <u>Annual Required Contribution</u> | <u>Actual Contribution</u> | <u>Percentage Contributed</u> |
|---------------------------|-------------------------------------|----------------------------|-------------------------------|
| 1997 | 2,797,910 | 697,248 | 24.92% |
| 1998 | 2,522,434 | 17,366,919 | 688.50% |
| 1999 | 773,683 | 778,642 | 100.64% |
| 2000 | 357,275 | 343,534 | 96.15% |
| 2001 | 0 | 400,000 | N/A |
| 2002 | 344,411 | 600,000 | 174.21% |
| 2003 | 412,445 | 600,000 | 145.47% |
| 2004 | 784,838 | 784,838 | 100.00% |
| 2005 | 881,447 | 881,447 | 100.00% |
| 2006 | 739,370 | 739,370 | 100.00% |
| 2007 | 771,772 | 771,772 | 100.00% |
| 2008 | 135,786 | 135,786 | 100.00% |
| 2009 | 198,608 | 250,000 | 125.88% |
| 2010 | 1,898,484 | 1,898,864 | 100.02% |
| 2011 | 1,217,506 | 1,217,506 | 100.00% |
| 2012 | 1,046,949 | 1,046,949 | 100.00% |

**KNOX COUNTY EMPLOYEE BENEFIT SYSTEM
KNOX COUNTY BOARD OF EDUCATION RETIREMENT PLAN**

GOVERNMENT ACCOUNTING STANDARDS BOARD STATEMENT No. 27

| | <u>6/30/2002</u> | <u>6/30/2003</u> | <u>6/30/2004</u> | <u>6/30/2005</u> | <u>6/30/2006</u> | <u>6/30/2007</u> | <u>6/30/2008</u> | <u>6/30/2009</u> | <u>6/30/2010</u> | <u>6/30/2011</u> | <u>6/30/2012</u> |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| 1. NPO: Net Pension Obligation/(Asset) at beginning of period | 3,931,267 | 3,649,183 | 3,437,034 | 3,413,870 | 3,385,016 | 3,356,407 | 3,328,039 | 3,299,911 | 3,220,629 | 3,193,029 | 3,166,042 |
| 2. Annual Pension Cost: | | | | | | | | | | | |
| a. Annual Required Contribution (ARC) | 344,411 | 412,445 | 784,838 | 881,447 | 739,370 | 771,772 | 135,786 | 198,608 | 1,898,484 | 1,217,506 | 1,046,949 |
| b. Interest on NPO | 314,501 | 291,935 | 274,963 | 256,040 | 253,876 | 251,731 | 249,603 | 247,493 | 241,547 | 239,477 | 237,453 |
| c. Adjustments to ARC * | (340,997) | (316,529) | (298,127) | (284,894) | (282,486) | (280,098) | (277,731) | (275,383) | (268,767) | (266,464) | (264,212) |
| d. Total = (a)+(b)+(c) | 317,916 | 387,851 | 761,674 | 852,594 | 710,761 | 743,404 | 107,658 | 170,718 | 1,871,264 | 1,190,519 | 1,020,190 |
| 3. Contributions made | 600,000 | 600,000 | 784,838 | 881,447 | 739,370 | 771,772 | 135,786 | 250,000 | 1,898,864 | 1,217,506 | 1,046,949 |
| 4. Increase in NPO = (2)(d)-(3) | (282,084) | (212,149) | (23,164) | (28,853) | (28,609) | (28,368) | (28,128) | (79,282) | (27,600) | (26,987) | (26,759) |
| 5. NPO at end of period = (1)+(4) | 3,649,183 | 3,437,034 | 3,413,870 | 3,385,016 | 3,356,407 | 3,328,039 | 3,299,911 | 3,220,629 | 3,193,029 | 3,166,042 | 3,139,284 |
| Amortization Period: 25 25 25 25 25 25 25 25 25 25 25 | | | | | | | | | | | |
| Interest Rate: 8.00% 8.00% 8.00% 7.50% 7.50% 7.50% 7.50% 7.50% 7.50% 7.50% 7.50% 7.50% | | | | | | | | | | | |

* The adjustment is a level dollar amortization of the NPO at beginning of period.