

ACTUARIAL REPORT
**CITY OF BRENTWOOD POLICE AND FIREMEN'S
PENSION PLAN**

January 1, 2013

Prepared
May 10, 2013





CITY OF BRENTWOOD POLICE AND FIREMEN'S PENSION PLAN

Table of Contents

Introduction and Actuarial Certification	1
Comments on Valuation Results	2
Summary of Valuation Results	
Change in Net Assets	3
Projected Cash Flows	4
Analysis of Contribution Input	5
Display of Security of Vested and Accrued Benefits	6
Supporting Actuarial Exhibits	
Participant Summary as of January 1, 2013	7
Development of Unfunded Accrued Liability	8
Determination of Recommended Contribution	9
Annual Reporting under GASB No. 25 and No. 27	10
Basis of Actuarial Valuation	
Statement of Actuarial Methods and Assumptions	11
Summary of Plan Provisions	12



CITY OF BRENTWOOD POLICE AND FIREMEN'S PENSION PLAN

Introduction and Actuarial Certification

Introduction

We are pleased to present the Actuarial Valuation report of the City of Brentwood Police and Firemen's Pension Plan (the Plan) as of 1/1/2013. At the request of the Plan Trustees we have completed this Actuarial Valuation as required by federal law. This report is intended solely for the Trustees, Plan Administrator and the Independent Accountant. It may only be provided to other parties in its entirety and with our prior approval, and we are not responsible for any unauthorized use. We do not maintain any relationship or have any conflict of interest that would impact the results presented in this report.

We have relied on employee and financial data supplied by the Trustees or their representatives to calculate the values of the retirement benefits for all participants. While we have reviewed the data for reasonableness and general consistency, we have not performed the extensive analysis or examination necessary to verify any of the information provided. To determine the value of Plan benefits, in conjunction with the Trustees, we have made certain assumptions as to rates of death, termination, and investment return. The funding method used determines how much of the value of these benefits which is not yet funded, is allocated to the current year. While the selected assumptions represent our best estimate of anticipated Plan experience, it is important to consider that Plan costs include a certain level of inherent risk and uncertainty. Actual Plan experience, in particular investment return experience, may result in material changes in the Plan's valuation.

The purpose of this Actuarial Valuation is to measure the funding status of the Plan, analyze the preceding year's experience, and determine the range of the minimum required and maximum allowable contribution for the Plan Year beginning 1/1/2013. This report and its results cannot be relied upon for other than its intended purpose. Any attempt to use this report, either in whole or in part, for reasons other than those stated above can result in improper or misleading conclusions.

Actuarial Certification

This Actuarial Valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge and belief, this valuation is complete and accurate based on our understanding of the provisions of the Plan as summarized within the report. In our opinion, the actuarial assumptions and methods used are individually reasonable and in combination represent our best estimate of anticipated experience under the Plan.

This valuation was prepared by the undersigned actuaries, each of whom meets the Qualification Standards of the American Academy of Actuaries required to render the actuarial results and opinions presented within this report. We are available at any time to provide additional or supplementary information to explain the results of this report.

Ekon Benefits

Keith Kowalczyk
Associate of the Society of Actuaries
Member of the American Academy of Actuaries
Enrolled Actuary No. 11-2812

Zhimin Wang
Actuarial Analyst



CITY OF BRENTWOOD POLICE AND FIREMEN'S PENSION PLAN

Comments on Valuation

This valuation is based on employee data and financial data as of January 1, 2013.

Recommended Contribution

The recommended contribution increased by \$359,185 from \$1,391,849 last year to **\$1,751,034** this year.

The recommended contribution is based on the Aggregate Funding Method which spreads the remaining cost over the future working salaries of the current participants and is developed on Page 9. The recommended contribution increased mainly due to actuarial losses arising from changing the Mortality assumption to RP2000 Mortality male table set back 4 years for females to more nearly reflect mortality improvements and lowering the investment earning from 7.5% to 7.0% which added an extra degree of conservatism. This increase was slightly offset by an actuarial gain due to a 9.72% return on Plan assets which is higher than our assumed rate of 7.0% and an average 0.19% salary appreciation which is lower than our new assumed rate of 5.0%.

Contribution Analysis

An analysis of the contributions shows that the funds anticipated to be received for 2013 are \$472,121 less than needed to cover the recommended contribution. The current Pension Fund Tax Rates are as follows:

Residential	\$0.380/\$100 of assessed valuation
Commercial	\$0.407/\$100 of assessed valuation
Personal Property	\$0.385/\$100 of assessed valuation

Funding levels are determined as of the last day of the Plan Year.

	<u>2013</u>	<u>2012</u>
1. Expected Taxes	\$ 1,033,187	\$ 1,008,122
2. Expected Employee Contributions	<u>245,726</u>	<u>243,362</u>
3. Total Expected Contributions	1,278,913	1,251,484
4. 10-Year Contribution	1,945,905	1,510,080
5. Recommended Contribution (Aggregate Cost Method)	1,751,034	1,391,849
6. 30-Year Contribution	1,486,490	1,177,603

Please note the actual contributions for last year were \$18,556 higher than the anticipated contributions. We assumed this was from St. Louis County for protested property tax. Therefore, we are now carrying a receivable of \$218,465 due from the County for protested property tax as of 12/31/2012. We will still monitor the collection and reasonability of carrying \$218,465 as an accrual. Please see Page 3.

Current Liability Analysis

Due to the above mentioned reasons, the Accrued Benefits Security Ratio decreased from 102% to 95%. This calculation is presented on page 6.

Actuarial Procedures

Since the 1/1/2010 valuation, the funding method has been changed to better comply with the rules set by the Governmental Accounting Standards Board. Under the new method, the Unfunded Accrued Liability equals the Accrued Liability less the Value of Assets. Actual Plan experience is reflected as increases or decreases in the Unfunded Accrued Liability. The Unfunded Accrued Liability is re-amortized every year over a specified number of years until the assets exceed Accrued Liability.

We have included the GASB reporting requirements in this valuation based on the 30-year rolling amortization of the Unfunded Accrued Liability, as well as, a 5-year projection of cash flows.

Except for the modifications to the investment earnings, salary appreciation and Mortality assumptions, there have been no other changes in plan provisions, assumptions, or funding method since the prior valuation.



CITY OF BRENTWOOD POLICE AND FIREMEN'S PENSION PLAN

Change in Net Assets

	The PrivateBank Acc# 1055000593	The PrivateBank Acc# 1055001547	The PrivateBank Acc# 1055000600	The PrivateBank Acc# 1055000717	Totals
CASH BEGINNING BALANCE (01/01/2012)	1,032,526.38	1,806,706.54	10,110,626.29	10,879,615.26	23,829,474.47
ACCRUED CONTRIBUTION					
EMPLOYEE	18,875.14	0.00	0.00	0.00	18,875.14
EMPLOYER					
Protested Taxes	237,020.88	0.00	0.00	0.00	237,020.88
Taxes	688,536.79	0.00	0.00	0.00	688,536.79
Total Employer	925,557.67	0.00	0.00	0.00	925,557.67
ACCRUED EARNINGS	0.00	769.54	83,893.69	12,150.50	96,813.73
ACCRUED BENEFITS	0.00	0.00	0.00	0.00	0.00
ACCRUED BEGINNING BALANCE (01/01/2012)	1,976,959.19	1,807,476.08	10,194,519.98	10,891,765.76	24,870,721.01
 BENEFITS PAID	 -1,325,298.42	 0.00	 0.00	 0.00	 -1,325,298.42
 CONTRIBUTIONS					
EMPLOYEE	238,776.73	0.00	0.00	0.00	238,776.73
EMPLOYER					
Protested Taxes	0.00	0.00	0.00	0.00	0.00
Taxes	1,008,122.00	0.00	0.00	0.00	1,008,122.00
Total Employer	1,008,122.00	0.00	0.00	0.00	1,008,122.00
TOTAL CONTRIBUTIONS	1,246,898.73	0.00	0.00	0.00	1,246,898.73
 transfer	 1,200,000.00	 0.00	 -1,200,000.00	 0.00	 0.00
 EARNINGS					
INTEREST & DIVIDENDS	6,687.62	43,864.46	339,467.24	179,347.27	569,366.59
REALIZED GAIN	0.00	87,932.90	91,285.31	-21,838.32	157,379.89
UNREALIZED GAIN	0.00	200,673.01	157,233.97	1,527,469.97	1,885,376.95
EXPENSE	-108,605.56	-15,757.84	-24,763.77	-49,219.00	-198,346.17
TOTAL EARNINGS	-101,917.94	316,712.53	563,222.75	1,635,759.92	2,413,777.26
 ACCRUED ENDING BALANCE (12/31/2012)	 2,996,641.56	 2,124,188.61	 9,557,742.73	 12,527,525.68	 27,206,098.58
ACCRUED CONTRIBUTION					
EMPLOYEE	20,622.63	0.00	0.00	0.00	20,622.63
EMPLOYER					
Protested Taxes	218,465.05	0.00	0.00	0.00	218,465.05
Taxes	628,571.11	0.00	0.00	0.00	628,571.11
Total Employer	847,036.16	0.00	0.00	0.00	847,036.16
ACCRUED EARNINGS	0.00	1,115.44	74,965.91	9,925.00	86,006.35
ACCRUED BENEFITS PAID	0.00	0.00	0.00	0.00	0.00
CASH ENDING BALANCE (12/31/2012)	2,128,982.77	2,123,073.17	9,482,776.82	12,517,600.68	26,252,433.44



CITY OF BRENTWOOD POLICE AND FIREMEN'S PENSION PLAN

Projected Cash Flows as of January 1, 2013

<u>Date</u>	<u>Beginning Asset Balance</u>	<u>Contributions *</u>	<u>Distributions</u>	<u>Earnings</u>	<u>Ending Asset Balance</u>
12/31/2012	24,870,721	1,246,899	(1,325,298)	2,413,777	27,206,099
12/31/2013	27,206,099	1,278,913	(1,351,959)	1,901,870	29,034,924
12/31/2014	29,034,924	1,304,491	(1,617,057)	2,021,505	30,743,862
12/31/2015	30,743,862	1,330,581	(1,626,830)	2,141,702	32,589,315
12/31/2016	32,589,315	1,357,193	(1,736,971)	2,267,960	34,477,497
12/31/2017	34,477,497	1,384,337	(1,777,868)	2,399,651	36,483,617
12/31/2018	36,483,617	1,412,023	(1,895,085)	2,536,946	38,537,501

*Assumed that inflation will be 2% each year.



CITY OF BRENTWOOD POLICE AND FIREMEN'S PENSION PLAN

Analysis of Contribution Input

	Jan. 1, 2013	Jan. 1, 2012
<u>Expected Contributions</u>		
1. Estimated Tax Revenue		
\$0.380/\$100 Residential	\$516,731	\$497,687
\$0.407/\$100 Commercial	\$415,579	\$410,886
\$0.385/\$100 Personal Property	\$121,963	\$120,123
Collection Rate 0.98		
Estimated Tax Revenue	\$1,033,187	\$1,008,122
2. Required Employee Contribution	<u>\$245,726</u>	<u>\$243,362</u>
3. Total Expected Contributions:	\$1,278,913	\$1,251,484
<u>30 Year Payment of Initial Unfunded Actuarial Accrued Liability</u>		
Normal Cost	\$829,282	\$666,249
Amortization Payment	559,961	429,196
TOTAL (Beg. of Year)	<u>\$1,389,243</u>	<u>\$1,095,445</u>
TOTAL (End of Year)	\$1,486,490	\$1,177,603
<u>20 Year Payment of Unfunded Actuarial Accrued Liability</u>		
Normal Cost	\$829,282	\$666,249
Amortization Payment	655,896	497,226
TOTAL (Beg. of Year)	<u>\$1,485,178</u>	<u>\$1,163,475</u>
TOTAL (End of Year)	\$1,589,140	\$1,250,736
<u>10 Year Payment of Unfunded Actuarial Accrued Liability</u>		
Normal Cost	\$829,282	\$666,249
Amortization Payment	989,321	738,477
TOTAL (Beg. of Year)	<u>\$1,818,603</u>	<u>\$1,404,726</u>
TOTAL (End of Year)	\$1,945,905	\$1,510,080
<u>Aggregate Cost</u>		
TOTAL (Beg. of Year)	\$1,636,480	\$1,294,743
TOTAL (End of Year)	\$1,751,034	\$1,391,849



CITY OF BRENTWOOD POLICE AND FIREMEN'S PENSION PLAN

Display of Security of Vested and Accrued Benefits

	Jan. 1, 2013	Jan. 1, 2012
<u>Security of Vested Accrued Benefits</u>		
Present Value of Vested Accrued Benefits		
Retired Participants	\$ 12,147,177	\$ 9,652,182
Terminated Vested Participants	39,424	37,727
Active Participants	15,960,682	14,416,163
TOTAL	\$ 28,147,283	\$ 24,106,072
Assets	\$ 27,206,099	\$ 24,870,721
Vested Accrued Benefit Funded Status (The excess of assets over liabilities)	\$ (941,184)	\$ 764,649
Vested Accrued Benefit Security Ratio (The ratio of assets to liabilities)	97%	103%
<u>Security of Accrued Benefits</u>		
Present Value of Accrued Benefits		
Retired Participants	12,147,177	9,652,182
Terminated Vested Participants	39,424	37,727
Active Participants	16,492,954	14,781,398
TOTAL	\$ 28,679,555	\$ 24,471,307
Assets	\$ 27,206,099	\$ 24,870,721
Accrued Benefit Funded Status (The excess of assets over liabilities)	\$ (1,473,456)	\$ 399,414
Accrued Benefit Security Ratio (The ratio of assets to liabilities)	95%	102%



CITY OF BRENTWOOD POLICE AND FIREMEN'S PENSION PLAN

Participant Summary as of January 1, 2013

Active Participants

Active participants at beginning of past plan year	49
Active Participants who during the past year	
Retired	2
Died	0
Terminated	0
Active participants at end of past plan year	47
New entrants during the past year	3
Active participants at the beginning of current plan year	50
Active participants who are fully vested	35
Active participants who are partially vested	0
Active participants who are not vested	15

Retired Participants

Retired participants at beginning of past plan year	20
Active participants who retired during the past plan year	2
Retired participants who during the past plan year	
Died	0
Payments completed	0
Retired participants at the beginning of current plan year	22

Beneficiaries of Deceased Participants

Beneficiaries as of beginning of past plan year	7
Beneficiaries who during the past plan year	
Died	0
Payments completed	0
Active participants who died with beneficiaries	0
Retired participants who died with beneficiaries	0
Beneficiaries as of beginning of current plan year	7

Terminated-Vested Participants

Terminated-vested participants as of beginning of past plan year	1
Active participants who terminated with vested benefits	0
Terminated-vested participants who during the past plan year	
Died	0
Retired	0
Terminated-vested participants as of beginning of current plan year	1



CITY OF BRENTWOOD POLICE AND FIREMEN'S PENSION PLAN

Development of Unfunded Accrued Liability as of January 1, 2013

1.	a) Unfunded Accrued Liability as of January 1, 2012	\$	5,449,138
	b) Interest on 1(a) for one year		<u>408,685</u>
	c) Total	\$	5,857,823
2.	a) Normal Cost as of January 1, 2012		449,571
	b) Interest on 2(a) for one year		<u>33,718</u>
	c) Total	\$	483,289
3.	a) Contributions during the year	\$	1,008,122
	b) Interest on 3(a) to the end of the Plan Year		<u>207</u>
	c) Total	\$	1,008,329
4.	Expected Unfunded Accrued Liability as of December 31, 2012 (1) + (2) - (3)		5,332,783
5.	Adjustments to Expected Unfunded Accrued Liability		
	- Plan Amendment		0
	- Change in Actuarial Assumptions		3,127,032
	- Other		(1,024,841)
6.	Adjusted Expected Unfunded Accrued Liability as of December 31, 2012 (4) + (5)	\$	7,434,974



CITY OF BRENTWOOD POLICE AND FIREMEN'S PENSION PLAN

Determination of Recommended Contribution

	<u>Jan. 1, 2013</u>	<u>Jan. 1, 2012</u>
1. Present Value of Projected Benefits		
Actives - Future Retirement	\$ 28,681,235	\$ 24,439,128
- Future Withdrawals	1,056,435	1,598,453
- Future Death	389,974	473,394
Retirees	12,147,177	9,652,182
Terminated Vested	39,424	37,727
TOTAL	\$ 42,314,245	\$ 36,200,884
2. Assets	\$ 27,206,099	\$ 24,870,721
3. Present Value Future Normal Costs (1) - (2)	15,108,146	11,330,163
4. Present Value Future Salaries	33,275,039	29,954,675
5. Accrual Rate: (3) divided by (4)	0.454038	0.378244
6. Annual Salaries	3,604,276	3,423,041
7. Normal Cost for Recommended Contribution (5) x (6)	\$ 1,636,480	\$ 1,294,743
8. Recommended Contribution (7) + (interest to year end)	\$ 1,751,034	\$ 1,391,849



CITY OF BRENTWOOD POLICE AND FIREMEN'S PENSION PLAN

ANNUAL REPORTING UNDER GASB No. 25 and No. 27

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)*	Unfunded Actuarial Accrued Liability (UAAL)	Funded Ratio	Covered Payroll	UAAL as a Percentage of Covered Payroll
1/1/2010	22,890,944	27,007,531	4,116,587	84.8%	3,341,564	123.2%
1/1/2011	25,082,907	28,760,833	3,677,926	87.2%	3,274,620	112.3%
1/1/2012	24,870,721	30,319,859	5,449,138	82.0%	3,423,041	159.2%
1/1/2013	27,206,099	34,641,073	7,434,974	78.5%	3,604,276	206.3%

SCHEDULE OF EMPLOYER CONTRIBUTION AND PENSION COST

Year Ending	Contributions		Pension Expense		
	Annual Required Contribution	Percentage Contributed	Annual Pension Cost	Percentage of APC Contributed	Net Pension Obligation
12/31/2010	803,959	119.6% *	900,525	106.8%	(2,772,386)
12/31/2011	758,782	121.0% *	863,059	106.3%	(2,827,156)
12/31/2012	938,826	107.4% *	1,043,026	96.7%	(2,792,252)

*On a 30 year rolling amortization of UAL basis.



CITY OF BRENTWOOD POLICE AND FIREMEN'S PENSION PLAN

Statement of Actuarial Methods and Assumptions

Funding Method:

Entry Age Normal Cost Method - Under this method, the Entry Age Normal Cost is based exclusively on plan liabilities. This funding method attempts to maintain costs as a level percent of salary.

The Unfunded Accrued Liability equals the Accrued Liability less the Actuarial Values of Assets. Actual Plan experience is reflected as increases or decreases in the Unfunded Accrued Liability. The Unfunded Accrued Liability is re-amortized every year over a specified number of years until the assets exceed the Accrued Liability.

Valuation of Assets

All Assets are valued at Market Value

Mortality Rates

Pre-Retirement: RP2000 Mortality Male Table set back 4 years for females

Post-Retirement: RP2000 Mortality Male Table set back 4 years for females

Investment Earnings

Pre-Retirement: 7.00% per annum: compounded annually
Post-Retirement: 7.00% per annum: compounded annually

Salary Appreciation

Increase Rate: 5.00% per annum: compounded annually

Assumed Retirement Age

Normal Retirement Age as defined by the plan

Termination prior to Retirement other than Death

T-2 Actuary's Table

<u>Age</u>	<u>Probability of Termination</u>
20	0.054417
30	0.050722
40	0.035105
50	0.004074
55 & over	0.00000

Female ages are set back 3 years

Expense Load

None assumed



CITY OF BRENTWOOD POLICE AND FIREMEN'S PENSION PLAN

Summary of Plan Provisions

Year of Service	An Employee shall accrue a full Year of Service if he is an Employee of the Fire or Police Department for at least six months during an anniversary year of his employment.
Normal Pension	<ul style="list-style-type: none">a) Eligibility requirements: Age 55 with 20 Years of Service.b) Benefit: 3.5% of final two year average salary for each Year of Service for the first 20 years plus 1% of final two year average salary for each of the next 10 years.
Disability Pension	<ul style="list-style-type: none">a) Duty: Greater of (i) 70% of final two year average salary or (ii) 3.5% for each year of service up to 20 years and 1% of final two year average salary for each year of service between 20 and 30 years. Children's benefits are also payable if disablement occurs before age 55.b) Non-duty with 10 or more Years of Service: Greater of (i) 70% of final two year average salary or (ii) 3.5% for each year of service up to 20 years and 1% of final two year average salary for each year of service between 20 and 30 years. Children's benefits are also payable if disablement occurs before age 55.c) Non-duty with 5-9 Years of Service: 30% of final two year average salary. Children's benefits are also payable if disablement occurs before age 55.
Normal Form of Benefit	The Normal Form of payment of the Normal and Disability Pension Benefit is a Life Annuity with a spousal survivor benefit of 66-2/3%, payable until spouse's death or remarriage. Children's benefits are also payable.
Termination Pension	<ul style="list-style-type: none">a) 10 or more Years of Service: Normal Retirement Benefit based on Years of Service to date deferred and payable at Normal Retirement Date.b) Less than 10 Years of Service: Return of the employee's contributions with the interest credited to the employee's account.
Death Benefit	<ul style="list-style-type: none">a) Duty: Greater of (i) 40% of final two year average salary or (ii) 2.165% for each year of service up to 20 years and 0.67% of final two year average salary for each year of service between 20 and 30 years. Children's benefits are also payable.



CITY OF BRENTWOOD POLICE AND FIREMEN'S PENSION PLAN

Summary of Plan Provisions (continued)

- b) Non-duty with 10 or more Years of Service: Greater of (i) 40% of final two year average salary or (ii) 2.165% for each year of service up to 20 years and 0.67% of final two year average salary for each year of service between 20 and 30 years. Children's benefits are also payable.
- c) Non-duty with 5-9 Years of Service: 1.08% of final two year average salary for each Year of Service. Children's benefits are also payable.

Funeral Benefit

\$5,000 is payable in addition to the death benefit listed above.

Children's Benefit

10% of two year average salary for each child under age 18, with a maximum of 3 children. One half of this amount is payable for non-line of duty death or disability with 5 to 9 Years of Service.