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BAY COUNTY RETIREMENT SYSTEM
ASSET ALLOCATION STUDY RESULTS – OCTOBER 2013

PURPOSE

This Asset Allocation Study will form the basis of discussion toward ultimately establishing the long-term asset allocation target and commitment ranges. This report is intended to communicate the assumptions used and process followed in constituting the portfolio recommendations.

DESIGN OF ASSET ALLOCATION TARGETS AND COMMITMENT RANGES

The Asset Allocation Study was conducted in five steps. In the study we present analysis of the current policy and allocation of the fund. In addition, we recommended allocation levels for the various asset classes with the goal of meeting the objectives of the fund.

To accomplish this, Becker, Burke first evaluated the actuarial rate of return required to achieve the Plan's stated objectives. As part of this process, we considered all appropriate investment opportunities within applicable legal and fund guidelines, projected the future range of financial results from such opportunities (individually and in combination), and reviewed the expected results of future contributions and distributions as detailed in the Actuary's report.

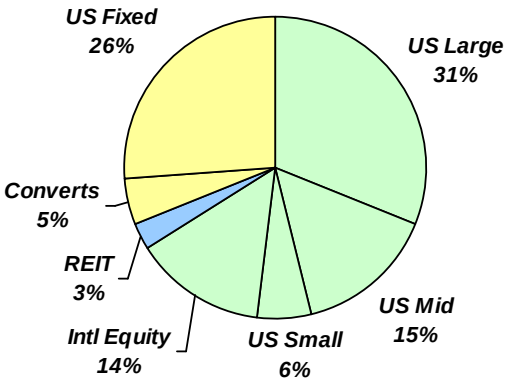
Step One: Gather Facts & Consider Desired Outcome

The stated objective of the Bay County Employees Retirement System is to establish and receive contributions, as a percentage of active member payroll, which will remain approximately level from year to year and will not have to be increased for future generations of citizens. From the 2012 actuarial report, the fund's current return assumption is 7.5% using a liability growth factor of 3.5% per year. The actuarial ratio of fund assets to unfunded liabilities is approximately 98%.

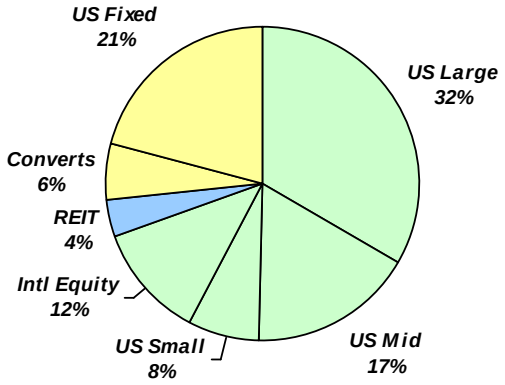
As part of our research we considered the cash flow needed by the fund to pay current liabilities. However, income generation is of much less concern than realizing the long term return target of the portfolio. Historically the fund has held a high equity commitment, upwards of 65% of the total assets.

Below, the current investment policy target allocation and the allocation of the fund as of 9/30/2013.

Investment Policy Target



Sept 30, 2013 Allocation



Step Two: Establish Portfolio Model Assumptions

Long term risk and return assumptions for the various asset classes utilized in the portfolio, including large, mid and small cap domestic stocks, foreign stocks, core investment grade bonds, convertible securities, REIT securities and real property were developed. Investment flexibilities allowed under the newly enacted statute were considered in this step. As a result, **we recommend adding direct Real Estate Property exposure**. In the recommended portfolio we have included an allocation to US Real Estate Properties with the belief that this asset class will complement the current REIT exposure and help to diversify the income generating assets of the portfolio.

Assumptions on risk and return were crafted in the context of historical performance data for each asset class in addition to the historical inter-relationships of the capital markets and current projections for interest rates and inflation. The results were further refined to reflect fundamental factors such as valuations, growth, liquidity, tax implications, regulatory factors, etc. As a result, each assumption reflects the combined experience and perspective of all Becker, Burke's investment professionals.

Further, our assumptions are assessed relative to those developed by other consultants and investment management firms. This was done to ensure that the results of our analysis were consistent and reasonable relative to the assumptions underlying the allocation models of other public pension funds.

Risk/Return Assumptions		
Asset Class	Expected Return	Volatility (Std Dev)
1. US Large Cap	9.0%	18.0%
2. US Mid Cap	9.5%	20.5%
3. US Small Cap	9.7%	22.5%
4. US Core Bonds	4.0%	7.0%
5. Intl Equity	9.3%	20.0%
6. REIT	7.5%	19.5%
7. Real Estate Property	6.7%	15.5%
8. Convertibles	6.4%	10.0%

Correlation Matrix								
	1	2	3	4	5	6	7	8
1. US Large Cap	1.000							
2. US Mid Cap	0.940	1.000						
3. US Small Cap	0.890	0.930	1.000					
4. US Core Fixed	-0.060	-0.040	-0.100	1.000				
5. Convertibles	0.850	0.860	0.790	-0.007	1.000			
6. Intl Equity	0.850	0.800	0.740	-0.100	0.750	1.000		
7. US REIT	0.550	0.630	0.633	-0.075	0.490	0.500	1.000	
8. US RE Property	0.350	0.300	0.200	0.300	0.450	0.400	0.600	1.000

Step Three: Determine Range of Allocation Constraints

Next, using computer based statistical modeling and optimization examined the range of resulting "efficient" asset allocation mixes. Investment restrictions were considered and incorporated into this step. Additionally, prudent constraints to the maximum or minimum allocations of certain asset classes were applied. This was done to prevent over allocation to investments exhibiting favorable risk/return that also contain other external risks not explicitly reflected in the input data. These constraints are listed below for the various asset classes:

Optimizer Allocation Constraints		
Asset Class	Min Allocation	Max Allocation
1. US Large Cap	0%	40%
2. US Mid Cap	0%	15%
3. US Small Cap	0%	15%
4. US Core Bonds	15%	100%
5. Intl Equity	0%	25%
6. REIT	0%	5%
7. Real Estate Property	0%	5%
8. Convertibles	0%	15%

Step Four: Select the Optimal Portfolio

Using the assumptions generated in step two, simulations were run that included analysis on the current portfolio and investment policy target. Hypothetical rate of return and volatility metrics for these portfolios are displayed below along with Portfolio A which includes an allocation to real estate property.

Portfolio Expected Risk/Return			
Asset Class	Policy Allocation	10/31/2013 Allocation	Portfolio A w/ RE
1. US Large Cap	31.0%	33.4%	31.0%
2. US Mid Cap	15.0%	17.0%	12.0%
3. US Small Cap	6.0%	7.5%	5.0%
4. Intl Equity	14.0%	11.6%	20.0%
5. REIT	3.0%	3.7%	2.0%
6. Real Estate Property	0.0%	0.0%	5.0%
7. Convertibles	5.0%	6.0%	4.0%
8. US Core Bonds	26.0%	20.8%	21.0%
EXPECTED RETURN	7.7%	7.9%	7.9%
EXPECTED RISK	13.0%	14.0%	13.5%

Our research work suggests that the policy allocation and current portfolio are expected to generate a long term average return above the actuarially assumed rate of 7.5%. Portfolio A, which includes an allocation to real estate property, suggests that a similar return can be achieved with lower volatility than the current allocation.

The total bond commitment of Portfolio A (21%) is lower than the investment policy (26%) but similar to the current allocation (20.8%). The commitment to US equity is also lower than either the policy or current allocation.

International equity allocation is significantly higher in Portfolio A relative to the others. The model recommends a commitment of 20% up from 14% in the policy and 11.6% in the portfolio currently. This change is justified by the improved outlook for international equity markets since the last study.

Step Five: Establish the Allocation Ranges

We recommend setting ranges of acceptable allocation for each asset around the allocation target. Over time, as a particular asset class nears or breaches the upper or lower limit, money should be moved accordingly to return the allocation to within the range.

Recommended Target and Rebalancing Ranges			
Asset Class	Minimum Limit	Target Allocation	Maximum Limit
1. US Large Cap	26%	31%	36%
2. US Mid Cap	9%	12%	15%
3. US Small Cap	3%	5%	7%
4. Intl Equity	14%	20%	26%
5. REIT	1%	2%	4%
6. Real Estate Property	1%	5%	6%
7. Convertibles	2%	4%	6%
8. Fixed Income	15%	21%	30%