

# Investment Committee

SIF US Equities MCM  
RFP Board  
Presentation

This presentation will be made available  
upon request.



## Ohio Bureau of Workers' Compensation

### Strategic Asset Allocation Analysis for Disabled Workers' Relief Fund

January 21, 2010

Guy M. Cooper  
Jordan Nault  
Kweku Obed

# Disabled Workers' Relief Fund

## Specialty Fund Description

### Disabled Workers' Relief Fund I

- Provides supplementary payments to workers whose combined Permanent and Total Disabled (PTD) pension benefits and medical payments plus Social Security disability benefits are lower than Disabled Workers' Relief Fund entitlement amount on claims that occurred prior to 1987
- Allows for cost of living increases to injured workers receiving PTD benefits
- Operates on a terminal funding or cash flow basis in which premiums collected each policy year are equal to the payments made in the same policy year without regard to the accident/injury year

### Disabled Workers' Relief Fund II

- Provides supplementary payments to workers whose combined PTD plus Social Security benefits are lower than the Disabled Workers' Relief Fund entitlement amount on claims that occurred in 1987 and after
- Allows for cost of living increases to injured workers receiving PTD benefits
- Current rate is 0.1% of premium base rate

Note: Financial statements combine Disabled Workers' Relief Fund I and II. Disabled Workers' Relief Fund I will eventually expire when all PTD claims prior to 1987 are no longer being paid. Disabled Workers' Relief Fund II will continue to grow as the BWC allows future PTD claims.

# Disabled Workers' Relief Fund

## Current Status

- Disabled Workers' Relief Fund operates on a terminal funding or cash flow basis
  - It is Pay As You Go
- Disabled Workers' Relief Fund I premiums are structured to match benefit claims
- Disabled Workers' Relief Fund II premiums are kept low and the prefunded balance is utilized to cover the gap between premiums collected and benefit claims
  - Disabled Workers' Relief Fund II accumulated a prefunded balance (1987-1993) prior to a formal Attorney General opinion mandating the Pay As You Go status
- Since the fund is operating on a Pay As You Go basis, the funding ratio is not the most useful metric to consider when defining the appropriate investment strategy
- Current prefunded balance is \$1.2B
- Over the next ten years, Disabled Workers' Relief Fund II benefit claims are estimated to increase and will erode the prefunded balance

# Disabled Workers' Relief Fund

## Alternative Mixes

	<u>Mix A</u> <u>(current)</u>	<u>Mix B</u>	<u>Mix C</u>	<u>Mix D</u>	<u>Mix E</u>	<u>Mix F</u>	<u>Mix G</u>
	20% Eq 80% FI	30% Eq 70% FI	20% Eq 80% FI	30% Eq 70% FI	40% Eq 60% FI	100% Eq 0% FI	70% Eq 30% FI
<b>Equity</b>							
US Equities - All Caps	20.0%	20.0%	13.4%	20.0%	26.7%	67.0%	26.7%
World x-US	0.0%	10.0%	6.6%	10.0%	13.3%	33.0%	13.3%
<b>Total - Public Equity</b>	<b>20.0%</b>	<b>30.0%</b>	<b>20.0%</b>	<b>30.0%</b>	<b>40.0%</b>	<b>100.0%</b>	<b>40.0%</b>
Public Equity: (US Equity : Non-US Equity)	100:0	67:33	67:33	67:33	67:33	67:33	67:33
<b>Fixed Income</b>							
US FI - Agg (Dur = 4.3)		15.0%	39.0%	34.0%	29.0%		29.0%
US FI - TIPS (Dur = 2.0)	20.0%	17.0%	40.0%	35.0%	30.0%		
US FI - Long Credit (Dur = 11.4)		28.0%					
US FI - Long Gov (Dur = 15.0)		9.0%					
US FI - Long G/C (Dur = 11.6)	59.0%						
Cash (Dur = 0.2)	1.0%	1.0%	1.0%	1.0%	1.0%		1.0%
<b>Total - Fixed Income</b>	<b>80.0%</b>	<b>70.0%</b>	<b>80.0%</b>	<b>70.0%</b>	<b>60.0%</b>	<b>0.0%</b>	<b>30.0%</b>
Est. Weighted Average Duration of US Fixed Income	9	8	3	3	3	0	4
<b>Alternatives</b>							
Private Equity							30%
<b>Total - Alternatives</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>30.0%</b>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Total Portfolio Statistics</b>							
Long-Term Expected Passive Annual Return	5.9%	6.6%	5.8%	6.2%	6.6%	8.6%	8.4%
Standard Deviation of Returns	8.8%	8.2%	5.3%	6.4%	7.7%	17.0%	14.2%

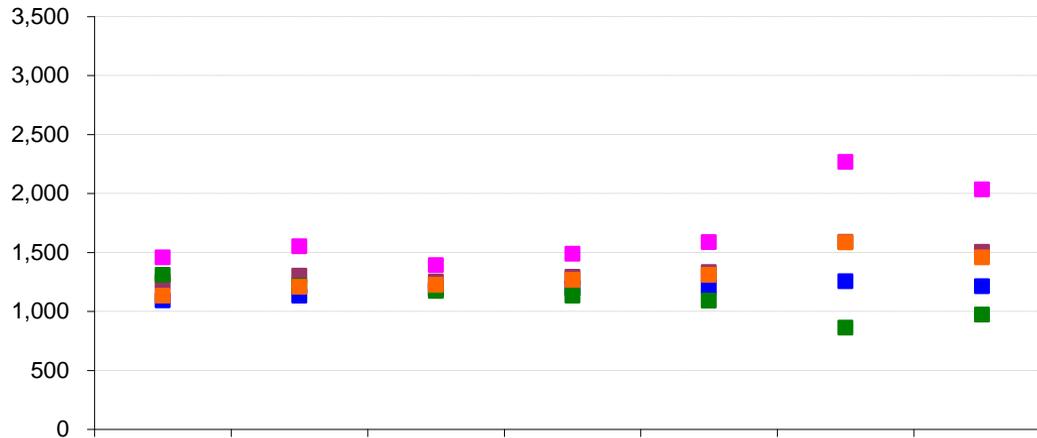
# Disabled Workers' Relief Fund

## Alternative Mixes

- Mix A represents the current asset allocation
- Mix B reflects the new SIF asset allocation and provides a higher expected return at a reduced risk compared to the current Disabled Workers' Relief Fund
- Mixes C-E vary between 20%-40% equity and include a fixed income allocation with a shorter duration (assumed 50:50 split between Agg and TIPS) resulting in reduced risk
- Mix F represents a theoretical all equity allocation
- Mix G represents a theoretical diversified asset allocation policy crafted to preserve the prefunded balance at over 100% in the Base Case Scenario

# Disabled Workers' Relief Fund – Alternative Mixes

## Market Value of Assets – 3 Years Out



(\$millions)

	Projected MVA as of 6/30/2012						
	Mix A	Mix B	Mix C	Mix D	Mix E	Mix F	Mix G
Base Case	1,253	1,302	1,252	1,292	1,333	1,589	1,503
Stagflation	1,092	1,133	1,187	1,196	1,205	1,253	1,211
Recession	1,309	1,214	1,172	1,131	1,090	861	971
Inflationary Growth	1,131	1,208	1,223	1,266	1,309	1,584	1,457
Ideal Growth	1,458	1,552	1,392	1,487	1,586	2,266	2,033

### Investment Strategy

Mix A - Current

Mix B - SIF allocation, 70% FI

Mix C - FI w/ shorter duration, 20% Eq.

Mix D - FI w/ shorter duration, 30% Eq.

Mix E - FI w/ shorter duration, 40% Eq.

Mix F - All equity

Mix G - 70% equity w/30% PE

Mix B – Improvement in asset levels under all scenarios, except Recession

Mix C – Lowest variability in asset levels outcomes

Mix D – Improvement in asset levels under all scenarios, except Recession

Mix E – Improvement in asset levels under all scenarios, except Recession

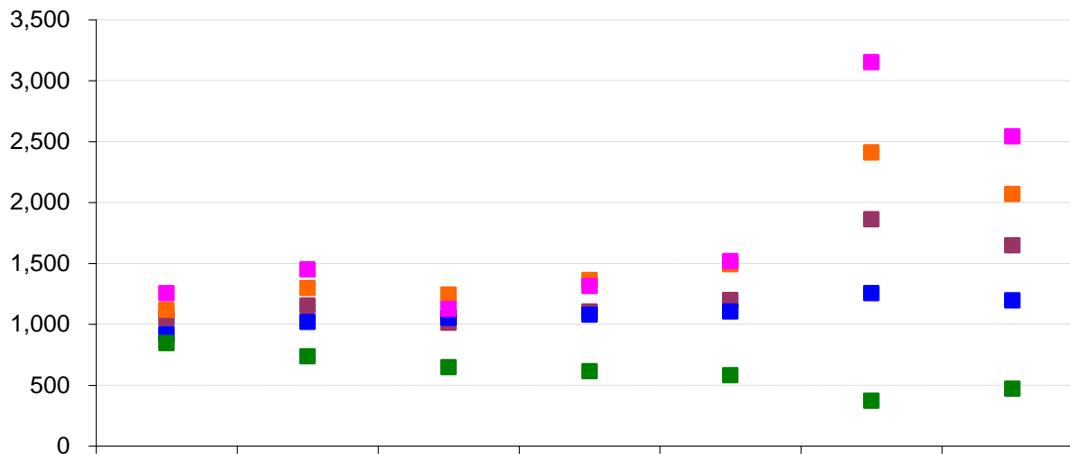
Mix F – Highest variability in asset levels

Mix G – High variability in asset levels outcomes

# Disabled Workers' Relief Fund – Alternative Mixes

## Market Value of Assets – 10 Years Out

Investment Strategy
Mix A - Current
Mix B - SIF allocation, 70% FI
Mix C - FI w/ shorter duration, 20% Eq.
Mix D - FI w/ shorter duration, 30% Eq.
Mix E - FI w/ shorter duration, 40% Eq.
Mix F - All equity
Mix G - 70% equity w/30% PE



(\$millions)

	Projected MVA as of 6/30/2019						
	Mix A	Mix B	Mix C	Mix D	Mix E	Mix F	Mix G
Base Case	1,050	1,153	1,012	1,103	1,198	1,862	1,647
Stagflation	919	1,018	1,053	1,078	1,104	1,254	1,196
Recession	844	738	647	614	581	372	471
Inflationary Growth	1,117	1,297	1,242	1,364	1,492	2,411	2,070
Ideal Growth	1,254	1,450	1,126	1,314	1,517	3,151	2,543

- Mix B – Improvement in asset levels under all scenarios, except Recession
- Mix C – Conservative mix with low variability in asset levels
- Mix D – Improvement in asset levels under all scenarios, except Recession
- Mix E – Improvement in asset levels compared to current allocation, except under recession scenario
- Mix F – Highest variability in asset levels
- Mix G – High variability in asset levels outcomes

# Disabled Workers' Relief Fund

## Discussion

- Mix D, in our view, represents an improvement over the current investment strategy and offers the most sensible balance of diversification, risk, and return of all the proposed alternative mixes
  - Minimal (30 bps) increase in expected return and substantial decrease in expected standard deviation (240 bps) versus current mix
  - Given the pay-as-you-go nature of the fund, a shorter duration fixed income portfolio versus the current is reasonable
  - Fixed income allocation well diversified among Core Aggregate Bonds (Treasuries, Agencies, Corporates, Mortgages) and TIPS (Inflation Indexed Treasury Bonds)
  - 30% allocation to equity consistent with investment strategy of State Insurance Fund, facilitating ease of a transition if the two funds are merged

# Appendix

# Deterministic Economic Scenario Environments

## Contrasting Economic Growth and Inflation

		U.S. INFLATION		
		Low	Medium	High
U.S. ECONOMIC GROWTH	Low	<p><b>U.S. Prolonged Recession</b></p> <p>Economic growth and inflation fall over a three year time period and then recover partially, but not all the way back to equilibrium. Interest rates decline and remain at the lower level. Equity returns are initially negative, but rebound. Fixed income returns are initially very strong, but fall to a lower equilibrium level of return.</p>		<p><b>U.S. Stagflation</b></p> <p>Economic growth declines over a three year time period and recovers slightly, but not all the way back to equilibrium. Inflation jumps up and stays high for the forecast period. Initial equity and fixed income returns are negative, but once a new equilibrium is established, high nominal returns are earned, but returns are lower on an inflation-adjusted basis.</p>
	Moderate		<p><b>U.S. Base Case</b></p> <p>A projection of average economic growth and inflation. Equity returns based on current capital market assumptions. We assume that the yield curve rises at the short and intermediate maturities over a three year time horizon. After three years, fixed income starts to earn returns slightly above the equilibrium rate.</p>	
	High	<p><b>U.S. Ideal Growth</b></p> <p>Economic growth increases and stays above average for the remaining forecast period. Inflation drops to lower levels and stays low for the forecast period. Short term interest rates increase slightly while long term rates decline. Bond and equity returns are above average on an inflation-adjusted basis.</p>		<p><b>U.S. Inflationary Growth</b></p> <p>Economic growth increases over the first three years, then remains level for the remainder of the period. Inflation increases and stays high for the forecast period. Equities are initially hurt by rising inflation and interest rates, but reach a high equilibrium level of nominal return.</p>

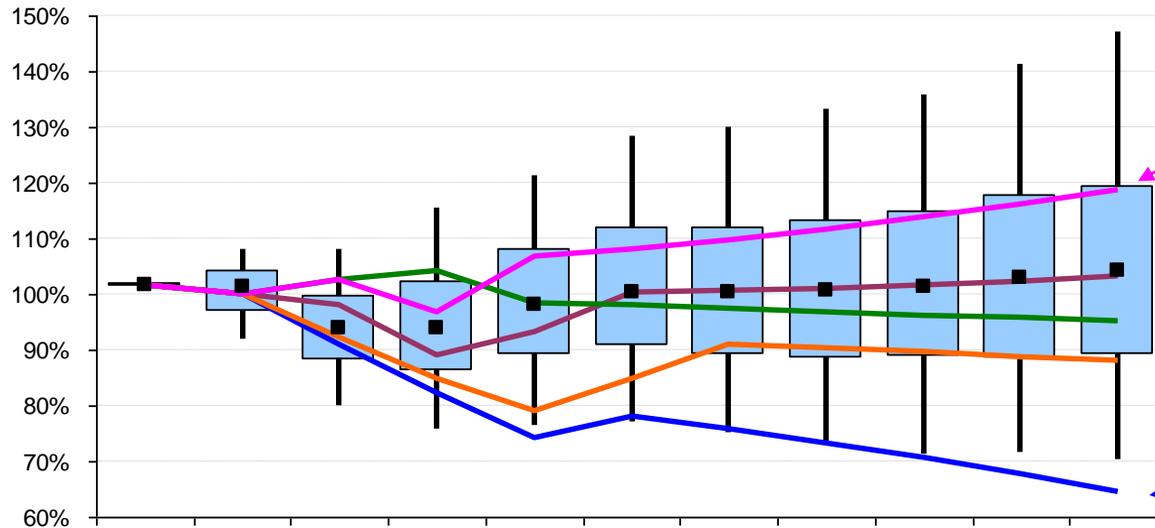
## Scenario Analysis

- This scenario analysis does not employ stochastic methods but it yields equivalent results.
- Stochastic analysis focused on a series of vertical bar charts that depicted the range of results that could be expected from alternative policies. These bar charts aggregated the results of 1000 simulated future time periods.
- Scenario Analysis creates an equivalent version of these bar charts.
  - Base Case represents the most likely outcome (median)
  - Ideal Growth represents a best case outcome (75<sup>th</sup> percentile)
  - Inflationary Growth represents a worst case outcome (25<sup>th</sup> percentile)
  - Stagflation represents a worst case outcome (5<sup>th</sup> percentile)
  - Recession usually represents a below median outcome (35<sup>th</sup> percentile)
    - Heavily influenced by economic sensitivity of the liabilities to inflation and/or medical inflation

# Comparison of Stochastic versus Deterministic Analysis

SIF Results (Base on January analysis)

Baseline Mix (80 FI/20 Eq), Smoothed Discount Rate Methodology



## Observations

- Ideal growth scenario fairly represents the 75th (25% upside probability)
- Base Case scenario and 50<sup>th</sup> percentile track fairly closely, especially during 2013 to 2018.
- Stagflation scenario is very representative of the worst case 5% percentile event, in later projection years, the stagflation scenario actually illustrates greater levels of risk

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
95th	102%	108%	108%	115%	121%	129%	130%	133%	136%	141%	147%
75th	102%	104%	100%	102%	108%	112%	112%	113%	115%	118%	119%
50th	102%	101%	94%	94%	98%	100%	100%	101%	101%	103%	104%
25th	102%	97%	88%	86%	89%	91%	89%	89%	89%	88%	89%
5th	102%	92%	80%	76%	76%	77%	75%	73%	71%	72%	70%
<b>Deterministic Scenarios</b>											
Base Case	102%	100%	98%	89%	93%	100%	101%	101%	102%	102%	103%
Stagflation	102%	100%	91%	82%	74%	78%	76%	73%	71%	68%	65%
Prolonged Recession	102%	100%	103%	104%	99%	98%	97%	97%	96%	96%	95%
Inflationary Growth	102%	100%	92%	85%	79%	85%	91%	90%	90%	89%	88%
Ideal Growth	102%	100%	102%	97%	107%	108%	110%	112%	114%	116%	119%

# Description of the Economic Environments

## Base Case

*Reflects current conditions as starting point; Treasury bond yields are expected to rise dramatically while corporate bond yields are rising at the very short and long end of the yield curve, decreasing in the mid range; equity returns, starting in year ending 2010 offer an expected risk premium over bonds.*

Base Case		Initial Value	June 2010	June 2011	June 2012	June 2013	June 2014	June 2015	June 2016	June 2017	June 2018	June 2019
Yields	Inflation		2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
	Economic Growth		3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
	Health Care Inflation		6.0%	7.0%	8.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
	3-Month Treasury	0.19%	0.19%	2.45%	3.60%	3.60%	3.60%	3.60%	3.60%	3.60%	3.60%	3.60%
	2-yr Treasury	1.11%	1.11%	3.12%	4.20%	4.20%	4.20%	4.20%	4.20%	4.20%	4.20%	4.20%
	5-yr Treasury	2.54%	2.54%	3.84%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%
	10yr Treasury	3.53%	3.53%	4.44%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
	30yr Treasury	4.52%	4.52%	4.74%	5.10%	5.10%	5.10%	5.10%	5.10%	5.10%	5.10%	5.10%
	Real 10yr TIPS	1.78%	1.78%	1.93%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
	3-Mo Corp AA	0.84%	0.84%	3.01%	4.20%	4.20%	4.20%	4.20%	4.20%	4.20%	4.20%	4.20%
	2-Yr Corp AA	2.97%	2.97%	3.99%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
	5-Yr Corp AA	4.32%	4.32%	4.77%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%
	10-Yr Corp AA	5.62%	5.62%	5.54%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
30-Yr Corp AA	6.17%	6.17%	5.85%	6.20%	6.20%	6.20%	6.20%	6.20%	6.20%	6.20%	6.20%	
Returns	Domestic Equities		22.4%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%
	International Equities		26.3%	8.3%	8.3%	8.3%	8.3%	8.3%	8.3%	8.3%	8.3%	8.3%
	Mkt Bonds		2.8%	0.4%	1.2%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%
	Long Bonds		7.2%	0.2%	0.8%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%
	Long Corp		11.3%	1.3%	1.8%	6.4%	6.4%	6.4%	6.4%	6.4%	6.4%	6.4%
	Long Gov		2.5%	-1.0%	-0.3%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%
	Extra Long Bonds		0.3%	-4.7%	-4.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%
	Cash		0.6%	1.9%	3.0%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%
	TIPS		6.04%	4.0%	4.1%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%
	Private Eq		37.0%	9.6%	9.6%	9.6%	9.6%	9.6%	9.6%	9.6%	9.6%	9.6%
High Yields		19.4%	6.9%	6.9%	6.4%	6.4%	6.4%	6.4%	6.4%	6.4%	6.4%	

# Description of the Economic Environments

## Stagflation

*Federal budget deficit causes sharp increase in debt issuance; foreign investors back away from US asset ownership, causing bond yields to rise, slowing economic growth as cost of capital rises.*

- Inflation and yields rise until June 2012 and stay at that level thereafter.
- Equity returns are low until June 2012 due to declining economic growth and rebound the following year.

<b>Stagflation</b>		Initial Value	June 2010	June 2011	June 2012	June 2013	June 2014	June 2015	June 2016	June 2017	June 2018	June 2019
Yields	Inflation		3.5%	4.3%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Economic Growth		0.0%	0.5%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
	Health Care Inflation		7.0%	8.5%	10.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
	3-Month Treasury	0.19%	0.19%	4.05%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
	2-yr Treasury	1.11%	1.11%	4.52%	6.30%	6.30%	6.30%	6.30%	6.30%	6.30%	6.30%	6.30%
	5-yr Treasury	2.54%	2.54%	5.10%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%
	10yr Treasury	3.53%	3.53%	5.57%	6.70%	6.70%	6.70%	6.70%	6.70%	6.70%	6.70%	6.70%
	30yr Treasury	4.52%	4.52%	5.88%	6.80%	6.80%	6.80%	6.80%	6.80%	6.80%	6.80%	6.80%
	Real 10yr TIPS	1.78%	1.78%	1.59%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
	3-Mo Corp AA	0.84%	0.84%	5.08%	7.30%	7.30%	7.30%	7.30%	7.30%	7.30%	7.30%	7.30%
	2-Yr Corp AA	2.97%	2.97%	5.86%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%
	5-Yr Corp AA	4.32%	4.32%	6.51%	8.10%	8.10%	8.10%	8.10%	8.10%	8.10%	8.10%	8.10%
	10-Yr Corp AA	5.62%	5.62%	7.14%	8.40%	8.40%	8.40%	8.40%	8.40%	8.40%	8.40%	8.40%
30-Yr Corp AA	6.17%	6.17%	7.45%	8.60%	8.60%	8.60%	8.60%	8.60%	8.60%	8.60%	8.60%	
Returns	Domestic Equities		15.3%	-0.7%	-0.3%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
	International Equities		19.4%	-0.2%	0.2%	8.1%	8.1%	8.1%	8.1%	8.1%	8.1%	8.1%
	Mkt Bonds		-0.6%	-3.1%	-1.3%	7.4%	7.4%	7.4%	7.4%	7.4%	7.4%	7.4%
	Long Bonds		1.5%	-6.0%	-4.1%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%
	Long Corp		5.1%	-5.4%	-3.3%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%
	Long Gov		-2.1%	-6.0%	-4.3%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
	Extra Long Bonds		-10.1%	-17.8%	-16.7%	7.3%	7.3%	7.3%	7.3%	7.3%	7.3%	7.3%
	Cash		0.9%	3.1%	5.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%
	TIPS		7.79%	6.9%	7.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%
	Private Eq		28.0%	-1.7%	-1.2%	9.2%	9.2%	9.2%	9.2%	9.2%	9.2%	9.2%
	High Yields		14.5%	1.9%	3.3%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%

# Description of the Economic Environments

## Recession

*An event causing investors to jump from stocks to bonds; were the shock large enough, it could depress economy that is still trying to revive itself.*

- Economic growth falls over a three year time period and then recovers.
- Inflation rate increases over a three year time period and remains at the lower level.
- Both intermediate and longer term bond yields decrease significantly over three years.
- Equity returns are initially low (even negative), but rebound to a lower equilibrium level.
- Fixed income returns are initially very strong, but fall to a lower equilibrium level.

Recession		Initial Value	June 2010	June 2011	June 2012	June 2013	June 2014	June 2015	June 2016	June 2017	June 2018	June 2019
Yields	Inflation		0.5%	1.0%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
	Economic Growth		-0.7%	-0.3%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
	Health Care Inflation		6.0%	6.5%	6.5%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
	3-Month Treasury	0.19%	0.19%	0.21%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
	2-yr Treasury	1.11%	1.11%	0.82%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%
	5-yr Treasury	2.54%	2.54%	1.44%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
	10yr Treasury	3.53%	3.53%	2.27%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
	30yr Treasury	4.52%	4.52%	2.68%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
	Real 10yr TIPS	1.78%	1.78%	1.43%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%
	3-Mo Corp AA	0.84%	0.84%	1.25%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%
	2-Yr Corp AA	2.97%	2.97%	2.09%	2.15%	2.15%	2.15%	2.15%	2.15%	2.15%	2.15%	2.15%
	5-Yr Corp AA	4.32%	4.32%	2.84%	2.60%	2.60%	2.60%	2.60%	2.60%	2.60%	2.60%	2.60%
	10-Yr Corp AA	5.62%	5.62%	3.91%	3.55%	3.55%	3.55%	3.55%	3.55%	3.55%	3.55%	3.55%
30-Yr Corp AA	6.17%	6.17%	4.39%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	
Returns	Domestic Equities		7.6%	-12.9%	-15.2%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%
	International Equities		12.2%	-11.8%	-13.9%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%
	Mkt Bonds		7.1%	5.2%	4.9%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
	Long Bonds		15.3%	10.2%	10.1%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%
	Long Corp		17.3%	8.5%	8.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%
	Long Gov		12.6%	11.7%	11.7%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Extra Long Bonds		21.9%	23.0%	22.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
	Cash		0.1%	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
	TIPS		6.05%	4.3%	4.7%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
	Private Eq		18.4%	-17.0%	-19.8%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	High Yields		11.7%	-4.3%	-5.5%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%

# Description of the Economic Environments

## Inflationary Growth

*The Fed slows fight against inflation; job market tightens while productivity falls translating into a rise in inflation; less turmoil in the Middle East while up-tick in U.S. savings rate translates into increased domestic growth.*

- Similar annual inflation, yields and fixed income returns as for the Stagflation economic scenario but with higher equity returns due to stronger economic growth.

<b>Inflationary Growth</b>		Initial Value	June 2010	June 2011	June 2012	June 2013	June 2014	June 2015	June 2016	June 2017	June 2018	June 2019
Yields	Inflation		3.5%	4.3%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Economic Growth		3.4%	3.7%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
	Health Care Inflation		6.0%	7.5%	9.0%	10.0%	11.0%	12.0%	12.0%	12.0%	12.0%	12.0%
	3-Month Treasury	0.19%	0.19%	4.71%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
	2-yr Treasury	1.11%	1.11%	5.18%	7.30%	7.30%	7.30%	7.30%	7.30%	7.30%	7.30%	7.30%
	5-yr Treasury	2.54%	2.54%	5.70%	7.40%	7.40%	7.40%	7.40%	7.40%	7.40%	7.40%	7.40%
	10yr Treasury	3.53%	3.53%	6.10%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%
	30yr Treasury	4.52%	4.52%	6.44%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%
	Real 10yr TIPS	1.78%	1.78%	1.93%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
	3-Mo Corp AA	0.84%	0.84%	5.08%	7.30%	7.30%	7.30%	7.30%	7.30%	7.30%	7.30%	7.30%
	2-Yr Corp AA	2.97%	2.97%	5.86%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%
	5-Yr Corp AA	4.32%	4.32%	6.44%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
	10-Yr Corp AA	5.62%	5.62%	7.07%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%
30-Yr Corp AA	6.17%	6.17%	7.42%	8.55%	8.55%	8.55%	8.55%	8.55%	8.55%	8.55%	8.55%	
Returns	Domestic Equities		21.4%	8.0%	9.1%	11.7%	11.7%	11.7%	11.7%	11.7%	11.7%	11.7%
	International Equities		25.3%	8.1%	9.1%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%
	Mkt Bonds		-1.0%	-3.3%	-1.4%	8.1%	8.1%	8.1%	8.1%	8.1%	8.1%	8.1%
	Long Bonds		0.9%	-6.4%	-4.3%	8.4%	8.4%	8.4%	8.4%	8.4%	8.4%	8.4%
	Long Corp		5.4%	-5.0%	-3.0%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%
	Long Gov		-4.3%	-8.1%	-5.8%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%
	Extra Long Bonds		-13.6%	-22.5%	-21.4%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
	Cash		1.0%	3.6%	5.9%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%
	TIPS		6.59%	5.5%	6.3%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%
	Private Eq		35.7%	9.2%	10.5%	13.8%	13.8%	13.8%	13.8%	13.8%	13.8%	13.8%
High Yields		19.3%	8.7%	10.6%	10.1%	10.1%	10.1%	10.1%	10.1%	10.1%	10.1%	

# Description of the Economic Environments

## Ideal Growth

*Jobs grow; consumers continue spending resulting in economic growth; Fed completes anticipated increase in fed funds rate, minimizing fears of inflation on the part of investors; productivity gains also suppress inflation.*

- Economic growth becomes stronger and rises to 4% by December 2012.
- Equities slightly boom and earn near 25% in 2010 through 2012.
- Inflation remains tame, subsides to 1.8% by December 2012.

<b>Ideal Growth</b>		Initial Value	June 2010	June 2011	June 2012	June 2013	June 2014	June 2015	June 2016	June 2017	June 2018	June 2019
Yields	Inflation		2.5%	2.1%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
	Economic Growth		3.4%	3.7%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
	Health Care Inflation		6.0%	6.5%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
	3-Month Treasury	0.19%	0.19%	1.85%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%
	2-yr Treasury	1.11%	1.11%	2.48%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%
	5-yr Treasury	2.54%	2.54%	3.10%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
	10yr Treasury	3.53%	3.53%	3.60%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%
	30yr Treasury	4.52%	4.52%	4.01%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
	Real 10yr TIPS	1.78%	1.78%	1.76%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
	3-Mo Corp AA	0.84%	0.84%	2.15%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
	2-Yr Corp AA	2.97%	2.97%	3.09%	3.65%	3.65%	3.65%	3.65%	3.65%	3.65%	3.65%	3.65%
	5-Yr Corp AA	4.32%	4.32%	3.77%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
	10-Yr Corp AA	5.62%	5.62%	4.51%	4.45%	4.45%	4.45%	4.45%	4.45%	4.45%	4.45%	4.45%
30-Yr Corp AA	6.17%	6.17%	4.99%	4.90%	4.90%	4.90%	4.90%	4.90%	4.90%	4.90%	4.90%	
Returns	Domestic Equities		35.2%	23.2%	21.6%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%
	International Equities		38.4%	22.5%	21.1%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%
	Mkt Bonds		4.9%	2.9%	3.2%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%
	Long Bonds		10.9%	4.7%	4.7%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%
	Long Corp		15.2%	6.0%	6.0%	5.1%	5.1%	5.1%	5.1%	5.1%	5.1%	5.1%
	Long Gov		7.4%	4.9%	4.9%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%
	Extra Long Bonds		6.4%	3.1%	3.2%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
	Cash		0.5%	1.4%	2.3%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%
	TIPS		6.38%	4.0%	3.7%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%
	Private Eq		52.9%	28.2%	26.2%	10.1%	10.1%	10.1%	10.1%	10.1%	10.1%	10.1%
	High Yields		24.0%	12.2%	11.4%	5.7%	5.7%	5.7%	5.7%	5.7%	5.7%	5.7%

## Disabled Workers' Relief Fund

### Assumptions – Enterprise Report July 2009

- 6/30/09 Financial Statement Liability (in thousands) = \$2,108,640
- 6/30/09 Financial Statement Assets (in thousands) = \$2,950,535
- June 30, 2009 Discount Rate = 4.50%
- June 30, 2009 Inflation Assumption (COLA) = 4.0%
- June 30, 2009 Medical Inflation Trend = 1<sup>st</sup> year: 6.0%, 2<sup>nd</sup> year: 7.0%, 3<sup>rd</sup> year: 8.0%, Long term: 9.0%

## Disabled Workers' Relief Fund

### Assumptions – Sensitivities to economic changes

- Interest Rate Sensitivity
  - A 1% change in the discount rate, such as from 5% to 4%, will increase the discounted liability by 12.38%
- Inflation Sensitivity
  - A 1% point increase in wage inflation (from 4% to 5%) will increase the discounted liability by 17.14%
- Expected Disabled Workers' Relief Fund II Benefit Payments over the next ten years (in millions, based on 2008 projection model)

Year Ending	Benefit Payments	Year Ending	Benefit Payments
2010	46.6	2015	93.9
2011	55.4	2016	104.1
2012	64.6	2017	114.4
2013	74.2	2018	124.7
2014	83.9	2019	135.2

# MERCER



MARSH MERCER KROLL  
GUY CARPENTER OLIVER WYMAN

DATE: January 13, 2010

TO: BWC Investment Committee  
BWC Board of Directors

FROM: Bruce Dunn, CFA, Chief Investment Officer

SUBJECT: **Chief Investment Officer Recommendation**  
**Asset Allocation Strategy**  
**Disabled Workers' Relief Fund**

The BWC Chief Investment Officer (CIO) is supportive of the asset allocation mix represented as Mix D for the Disabled Workers' Relief Fund (DWF) investment portfolio reflected in the Mercer Strategic Asset Allocation Analysis report dated January 21, 2010 to be presented to the BWC Investment Committee. Given the current prefunded balance level of this specialty fund that has been operating on a Pay As You Go status since 1993, Mix D provides a balanced and reasonable asset allocation weighting that improves the expected return and significantly reduces the variability of expected portfolio return when compared to the current targeted asset allocation mix of DWF. Mix D provides a 70/30 targeted fixed income (including cash)/equity asset allocation mix for DWF compared to its current 80/20 target mix.

As the asset mix table on page 3 of this Mercer report illustrates, Mix D provides a materially lower 6.4% expected standard deviation or variability of return compared to the 8.8% level for the existing implemented asset allocation Mix A for DWF. This is largely because Mix A emphasizes highly volatile long duration bonds for 59% of total targeted invested assets. The weighted average duration of the fixed income portfolio is a much lower 3 years for asset Mix D compared to a three times higher duration of 9 years for asset Mix A. This means that if interest rate levels rise significantly across the yield curve, the large fixed income portfolio of DWF under current Mix A will fall in value by three times as much as the portfolio under Mix G. Yet Mix D provides a higher long-term expected 6.2% annual rate of return to the 5.9% expected annual rate of return of current Mix A. Given the \$1.2 billion current prefunded balance level of DWF, there is no reason to subject its investment portfolio to the potential risk of significant erosion of this prefunded balance by continuing to invest in long duration bonds. Mercer projects that the much shorter duration fixed income portfolio of Mix D combined with a 10% allocation increase towards equities (specifically non-US equity) for additional portfolio diversification achieves a higher annual long-term expected return compared to the current mix.

The CIO also supports Mix D as its fixed income allocation between U.S. TIPS and the very broad Barclays Capital U.S. Aggregate fixed income benchmark index is virtually equally weighted (35/34% TIPS/Aggregate) and very balanced. The intermediate duration U.S. Aggregate benchmark index proposed represents a very broad and diversified cross section of the investment-grade fixed income market that includes

Treasuries, Agencies, Mortgages and Credits. The weighted average quality of the securities comprising this index is between AA1/AA2 which represents a high quality rating. A 75% increase in the target asset allocation exposure to TIPS to 35% from currently 20% is justified given the large exposure of DWF to cost of living adjustments in liability payments to injured workers receiving Permanent and Total Disability benefits. The 50% increase in equity allocation exposure to 30% from currently 20% with Mix D will increase the expected portfolio rates of return, including for the purpose of achieving higher expected returns than fixed income investments when in an accelerating inflationary environment scenario where cost of living payment adjustments also accelerate.

The CIO is supportive of a 2:1 proportion of U.S. and non-U.S. equity allocation within the proposed 30% equity asset class allocation weighting for DWF represented by Mix D. Since DWF already has a 20% allocation to U.S. equities, the entire 10% portfolio allocation increase will be focused on gaining foreign equity exposure. It is appropriate and beneficial to diversify the DWF equity assets towards ownership of foreign equities. The projected growth rates of foreign economies and their demands for goods and services in the aggregate are higher than the projected growth rates of the U.S. economy. The total market capitalization of publicly owned stocks in foreign equity markets is now larger than the U.S. equity markets. With respect to the U.S. public equity portfolio, a shift to the Russell 3000 index benchmark recommended by Mercer from the S&P 500 index benchmark is endorsed by the CIO. This public equity benchmark change will increase the diversity of stock holdings for the DWF portfolio to include small-cap stocks and increase exposure and ownership of mid-cap stocks.

The 70/30 fixed income/equity portfolio weighting reflected in recommended Mix D is also the same target asset allocation mix of the State Insurance Fund portfolio approved in April 2009 by the BWC Investment Committee and BWC Board of Directors. As introduced last month to the Investment Committee, it is the intention of the BWC Senior Team to take the necessary steps to consolidate DWF into the State Insurance Fund in 2011. Having the same 70/30 fixed income/equity asset allocation targets for the two largest trust funds of the Bureau, representing a combined 98% of total BWC invested assets, facilitates the merging of such assets and accordingly reduces future portfolio transaction expenses.

Attached to this CIO recommendation as page 3 is the current Section VI.B of the BWC Statement of Investment Policy and Guidelines (IPS) pertaining to the Disabled Workers' Relief Fund. In addition, attached is both a marked version (page 4) followed by a clean accepted changes version (page 5) of recommended changes to Section VI.B of the IPS that reflects the target asset allocation of Mix D recommended for consideration for the Disabled Workers' Relief Fund by Mercer and the CIO. These recommended marked changes shown in red pertain to investment asset categories, target allocation percentage and permissible ownership range percentages of each asset class, and the performance benchmark of each asset class category. As reflected in the second paragraph of IPS Section VI.B, the recommended marked changes shown in red were prepared by John Pedrick, BWC Chief Actuarial Officer.

**The Ohio Bureau of Workers' Compensation  
Statement of Investment Policy and Guidelines**

**B. Disabled Workers' Relief Fund (DWRF)**

The Disabled Workers' Relief Fund ("DWRF") provides supplementary payments to workers whose combined Permanent and Total Disabled plus Social Security disability benefits are lower than the DWRF entitlement amount.

These liabilities are long-term in nature, with an approximate duration of 10 years. Premiums are set each year at a level that is expected to cover the cost of future claims. These costs are discounted at a rate that is consistent with the guidelines as established by the GASB.

The Board has a long-term asset allocation policy that identifies the strategic target weights to each of the major asset classes. The table below highlights the general asset classes approved for investment and the strategic target weights. The allowable range for all target weights is reflected in the following table.

<b><u>Disabled Workers' Relief Fund</u></b>			
<u>Investment Category</u>	<u>Target Allocation</u>	<u>Permissible Range</u>	<u>Performance Benchmark</u>
Indexed Long Duration Fixed Income	59%	55% - 63%	Barclays Capital U.S. Long Government / Credit Index
Indexed Treasury Inflation Protected Securities	20%	17% - 23%	Barclays Capital U.S. Treasury: U.S. TIPS Index
Cash and Cash Equivalents	1%	0 - 6%	3 Month U.S. Treasury Bills
<b>Total Fixed Income</b>	<b>80%</b>		
Indexed U.S. Equity	20%	17% - 23%	Standard & Poor's 500 Stock Index
<b>Total Public Equity</b>	<b>20%</b>		
<b>Total Disabled Workers' Relief Fund</b>	<b>100%</b>		<b>Fund Performance Benchmark</b> <u>A weighted index consisting of:</u> 59% BC U.S. Gov/Credit Long Term Index 20% BC U.S. TIPS Index 1% 3 Month U.S. Treasury Bills 20% S&P 500 Index

## The Ohio Bureau of Workers' Compensation Statement of Investment Policy and Guidelines

### B. Disabled Workers' Relief Fund (DWRF)

The Disabled Workers' Relief Fund ("DWRF") provides supplementary payments to workers whose combined Permanent and Total Disabled plus Social Security disability benefits are lower than the DWRF entitlement amount.

These liabilities are long-term in nature. However, premiums are set each year on a "pay as you go" basis. BWC originally collected premium at a level that is expected to cover the cost of future claims, but a State of Ohio Attorney General's Opinion in 1993 clarified that premiums should be on a pay as you go basis. Due to this prior treatment the liabilities of the fund, discounted at a rate that is consistent with the guidelines as established by the GASB, are supported by both cash and invested assets as well as an accrued premium asset.

The Board has a long-term asset allocation policy that identifies the strategic target weights to each of the major asset classes. The table below highlights the general asset classes approved for investment and the strategic target weights. The allowable range for all target weights is reflected in the following table.

**Deleted:** .  
**Deleted:** with an approximate duration of 10 years.  
**Deleted:** P  
**Deleted:** .  
**Deleted:** These costs are

<u>Disabled Workers' Relief Fund</u>			
<u>Investment Category</u>	<u>Target Allocation</u>	<u>Permissible Range</u>	<u>Performance Benchmark</u>
Indexed Barclays Capital Aggregate Fixed Income	34%	30% - 38%	Barclays Capital U.S. Aggregate Index
Indexed Treasury Inflation Protected Securities	35%	31% - 39%	Barclays Capital U.S. Treasury: U.S. TIPS Index
Cash and Cash Equivalents	1%	0 - 6%	3 Month U.S. Treasury Bills
<b>Total Fixed Income</b>	<b>80%</b>		
Indexed U.S. Equity	20%	17% - 23%	Russell 3000 Stock Index
Index Non-U.S. Equity	10%	7% - 13%	MSCI All World ex-U.S. Index
<b>Total Public Equity</b>	<b>20%</b>		
<b>Fund Performance Benchmark</b>			
<b>Total Disabled Workers' Relief Fund</b>	<b>100%</b>		A weighted index consisting of: 34% BC U.S. Aggregate Index 35% BC U.S. TIPS Index 1% 3 Month U.S. Treasury Bills 20% Russell 3000 Stock Index 10% MSCI All World ex-US Index

**Deleted:** Indexed Long Duration Fixed Income  
**Deleted:** Barclays Capital U.S. Long Government / Credit Index  
**Deleted:** 59%  
**Deleted:** 55% - 63%  
**Deleted:** 20%  
**Deleted:** 17% - 23%

**Deleted:** Standard & Poor's 500 Stock Index

**Deleted:** 59% BC U.S. Gov/Credit Long Term Index  
**Deleted:** 20

**Deleted:** S&P 500 Index  
**Formatted Table**  
**Formatted:** Tab stops: Not at 3.25" + 6.5"

**The Ohio Bureau of Workers' Compensation  
Statement of Investment Policy and Guidelines**

**B. Disabled Workers' Relief Fund (DWRF)**

The Disabled Workers' Relief Fund ("DWRF") provides supplementary payments to workers whose combined Permanent and Total Disabled plus Social Security disability benefits are lower than the DWRF entitlement amount.

These liabilities are long-term in nature. However, premiums are set each year on a "pay as you go" basis. BWC originally collected premium at a level that is expected to cover the cost of future claims, but a State of Ohio Attorney General's Opinion in 1993 clarified that premiums should be on a pay as you go basis. Due to this prior treatment the liabilities of the fund, discounted at a rate that is consistent with the guidelines as established by the GASB, are supported by both cash and invested assets as well as an accrued premium asset.

The Board has a long-term asset allocation policy that identifies the strategic target weights to each of the major asset classes. The table below highlights the general asset classes approved for investment and the strategic target weights. The allowable range for all target weights is reflected in the following table.

<b><u>Disabled Workers' Relief Fund</u></b>			
<u>Investment Category</u>	<u>Target Allocation</u>	<u>Permissible Range</u>	<u>Performance Benchmark</u>
Indexed Barclays Capital Aggregate Fixed Income	34%	30% - 38%	Barclays Capital U.S. Aggregate Index
Indexed Treasury Inflation Protected Securities	35%	31% - 39%	Barclays Capital U.S. Treasury: U.S. TIPS Index
Cash and Cash Equivalents	1%	0 - 6%	3 Month U.S. Treasury Bills
<b>Total Fixed Income</b>	<b>70%</b>		
Indexed U.S. Equity	20%	17% - 23%	Russell 3000 Stock Index
Index Non-U.S. Equity	10%	7% - 13%	MSCI All World ex-U.S. Index
<b>Total Public Equity</b>	<b>30%</b>		
<b>Total Disabled Workers' Relief Fund</b>	<b>100%</b>		Fund Performance Benchmark <u>A weighted index consisting of:</u> 34% BC U.S. Aggregate Index 35% BC U.S. TIPS Index 1% 3 Month U.S. Treasury Bills 20% Russell 3000 Stock Index 10% MSCI All World ex-US Index

# STATE INSURANCE FUND

## Portfolio Transition Summary

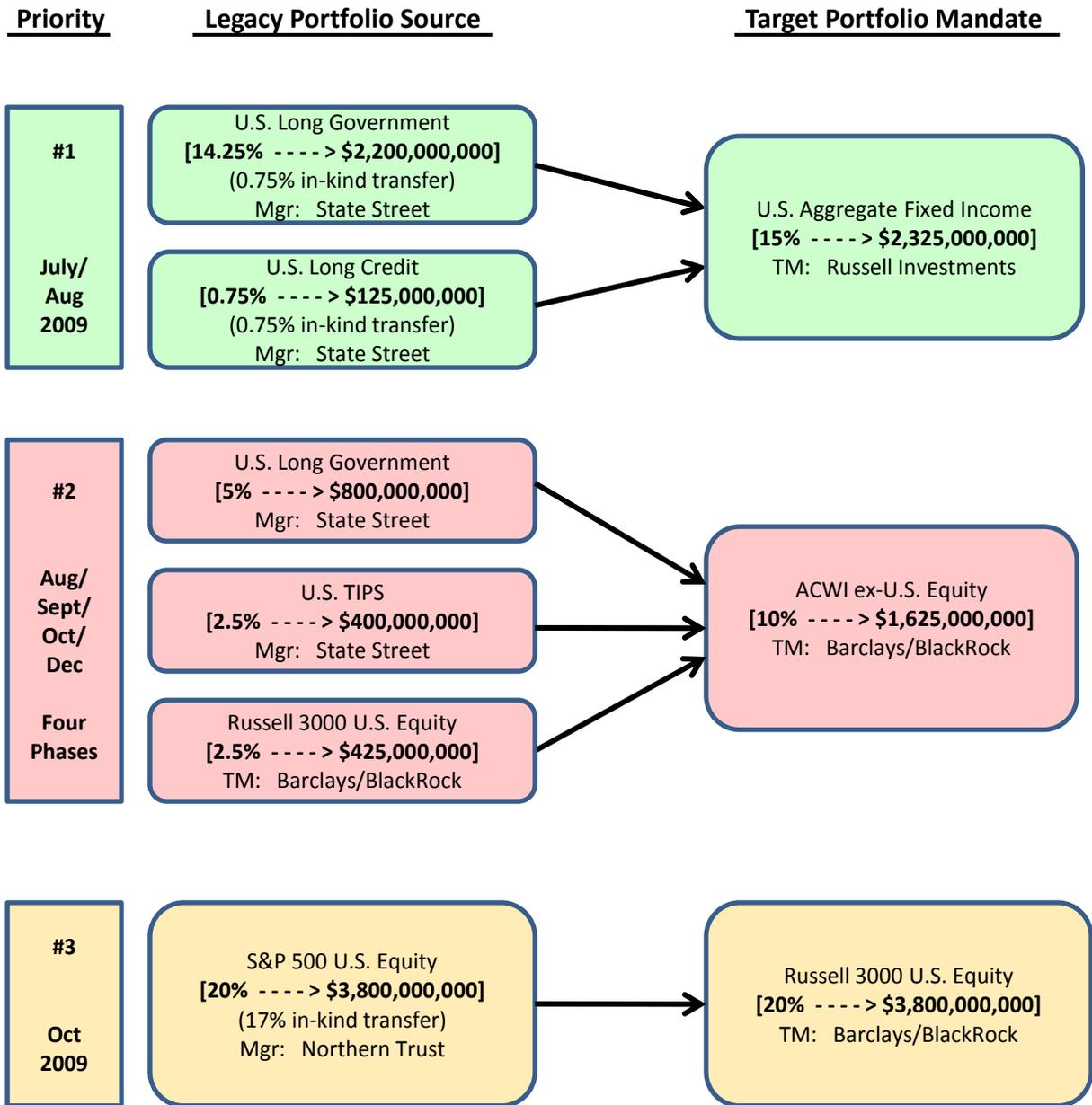


**January 21, 2010 Updated  
BWC Investment Division**



**Bureau of Workers'  
Compensation**

# State Insurance Fund Asset Allocation Transitions Implementation Priorities

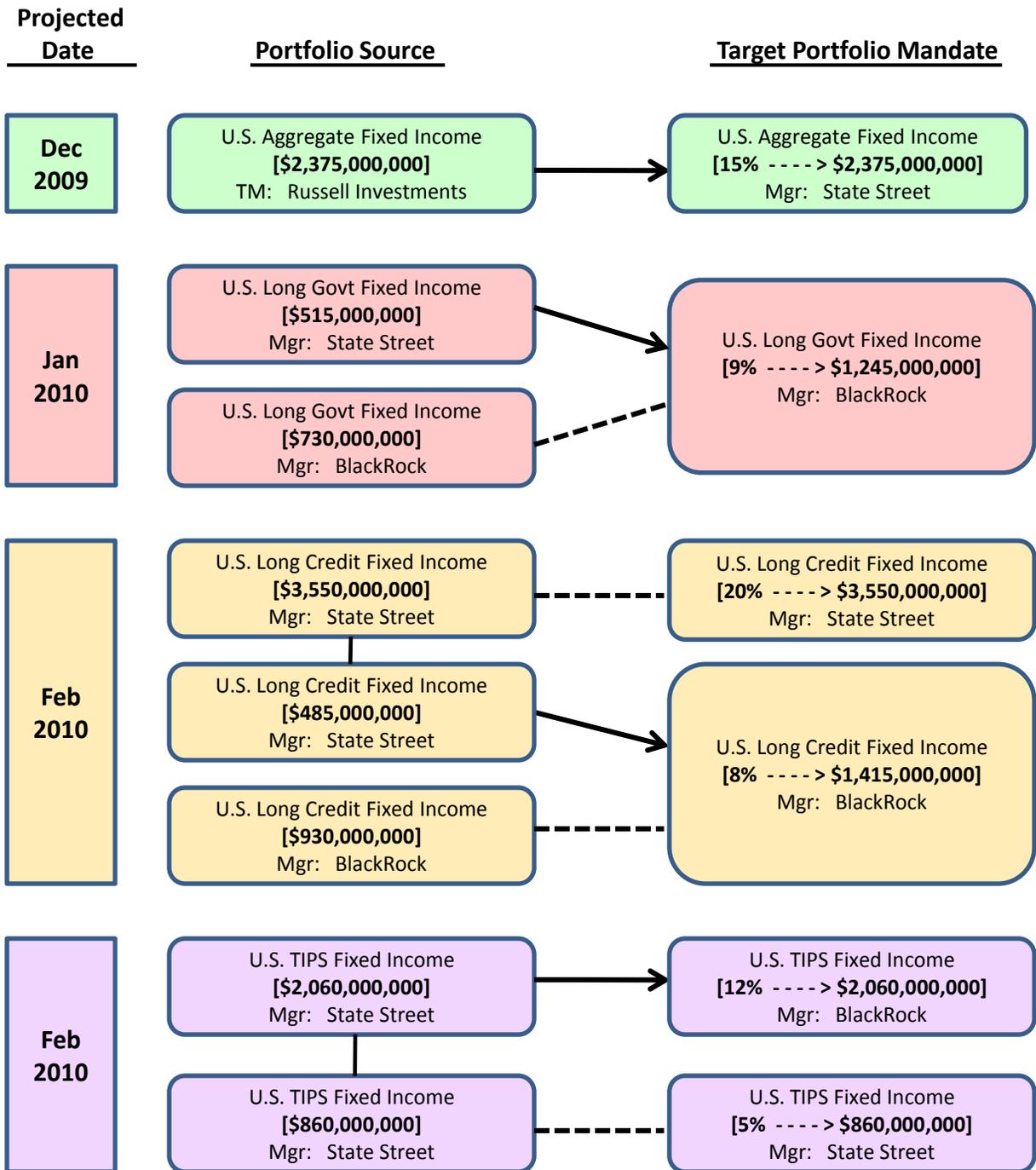


Rounded invested amounts shown are at time of respective transition executions

Percentages represent mandate target asset allocation

TM: Transition Manager engaged

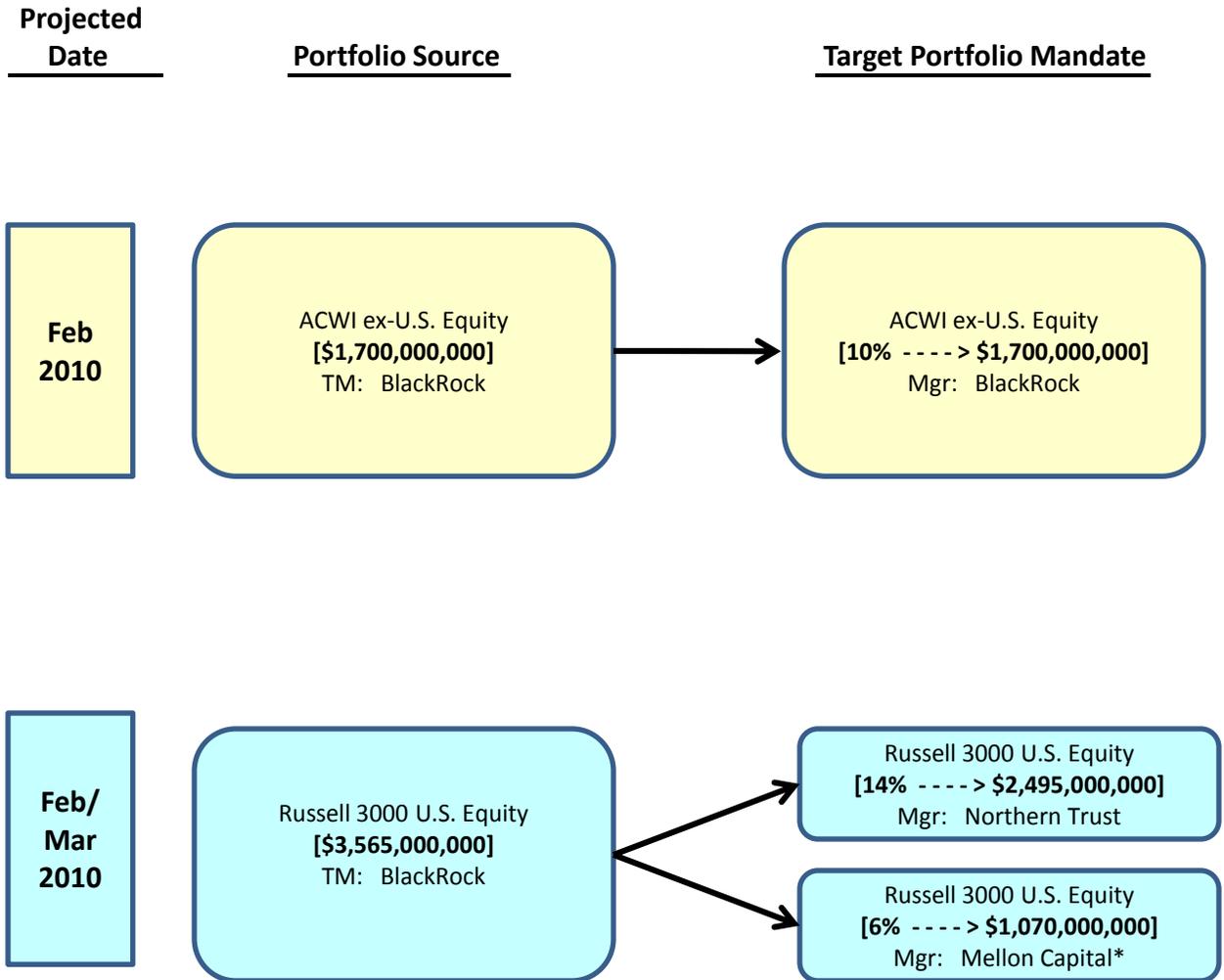
## State Insurance Fund Asset Allocation Transfers Fixed Income Portfolio



—————> represents in-kind transfer of securities between accounts

----- represents assets remaining in existing account

# State Insurance Fund Asset Allocation Transfers Equities Portfolio



—————> represents in-kind transfer of securities between accounts

Invested amounts represented are rounded and based on 12/31/09 market values

\* Pending BWC Board of Directors approval



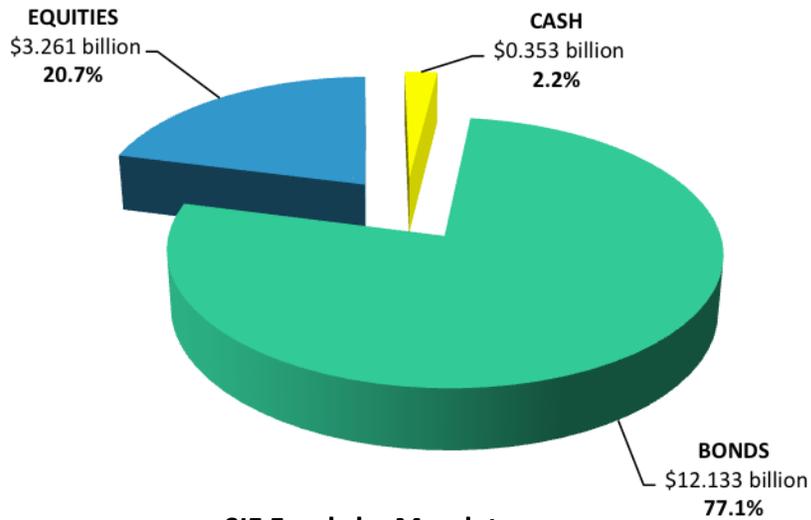
## State Insurance Fund Target Portfolio Managers Target Asset Allocation Distribution

	<u>State Street</u>	<u>BlackRock</u>	<u>Northern Trust</u>	<u>*Mellon Capital</u>	<u>Total</u>
<b>U.S. Long Credit FI</b>	<b>20%</b> [\$3.550 bln]	<b>8%</b> [\$1.415 bln]			<b>28%</b> [\$4.965 bln]
<b>U.S. Long Govt FI</b>		<b>9%</b> [\$1.245 bln]			<b>9%</b> [\$1.245 bln]
<b>U.S. TIPS FI</b>	<b>5%</b> [\$0.860 bln]	<b>12%</b> [\$2.060 bln]			<b>17%</b> [\$2.920 bln]
<b>U.S. Aggregate FI</b>	<b>15%</b> [\$2.375 bln]	<b>15%</b> [\$2.375 bln]			<b>30%</b> [\$4.750 bln]
<b>Fixed Income Total</b>	<b>40%</b> [\$6.785 bln]	<b>29%</b> [\$4.720 bln]			<b>69%</b> [\$11.505 bln]
<b>U.S. Equities</b>			<b>14%</b> [\$2.495 bln]	<b>6%</b> [\$1.070 bln]	<b>20%</b> [\$3.565 bln]
<b>Non-U.S. Equities</b>		<b>10%</b> [\$1.700 bln]			<b>10%</b> [\$1.700 bln]
<b>Equities Total</b>		<b>10%</b> [\$1.700 bln]	<b>14%</b> [\$2.495 bln]	<b>6%</b> [\$1.070 bln]	<b>30%</b> [\$5.265 bln]
<b>Grand Total</b>	<b>40%</b> [\$6.785 bln]	<b>39%</b> [\$6.420 bln]	<b>14%</b> [\$2.495 bln]	<b>6%</b> [\$1.070 bln]	<b>99%</b> [\$16.770 bln]

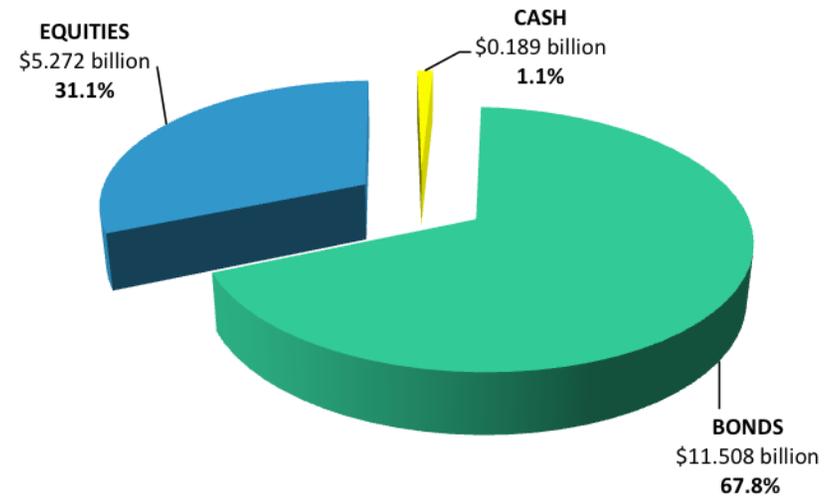
Invested amounts represented in brackets are rounded and based on 12/31/09 market values

\*pending BWC Board of Directors approval

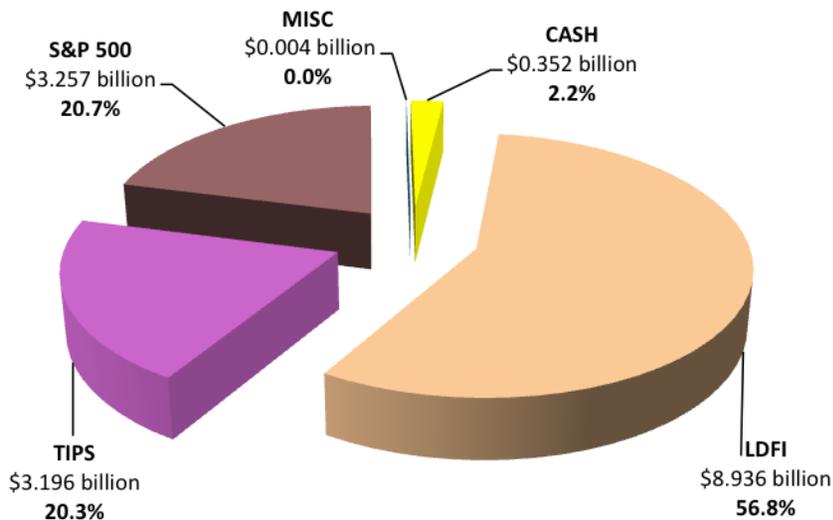
**SIF Funds by Asset Class  
6/30/09**



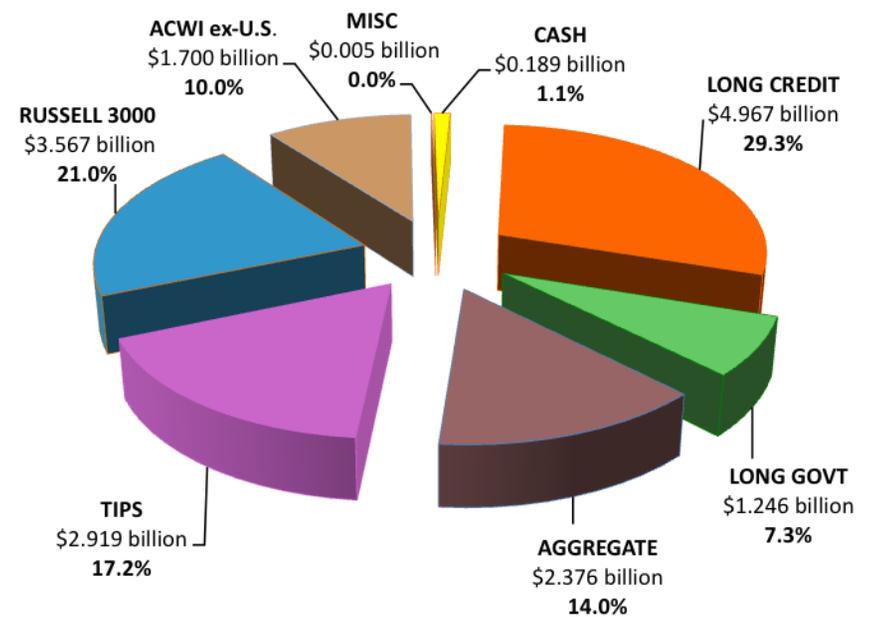
**SIF Funds by Asset Class  
12/31/09**



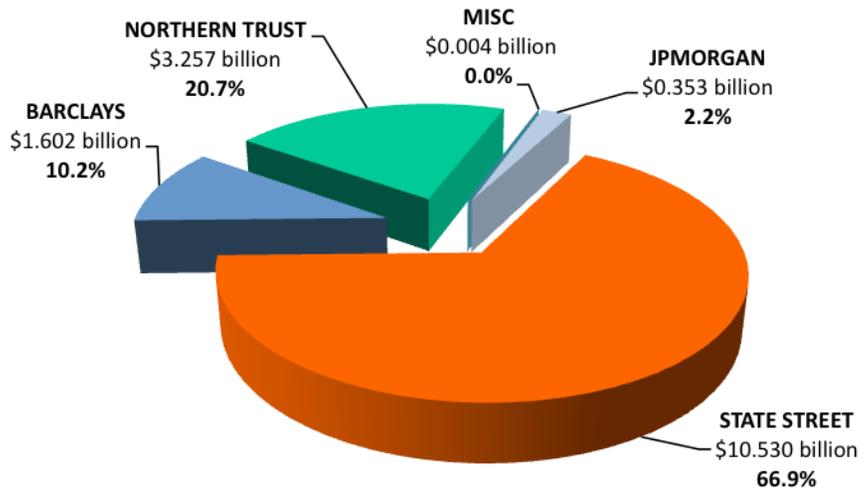
**SIF Funds by Mandate  
6/30/09**



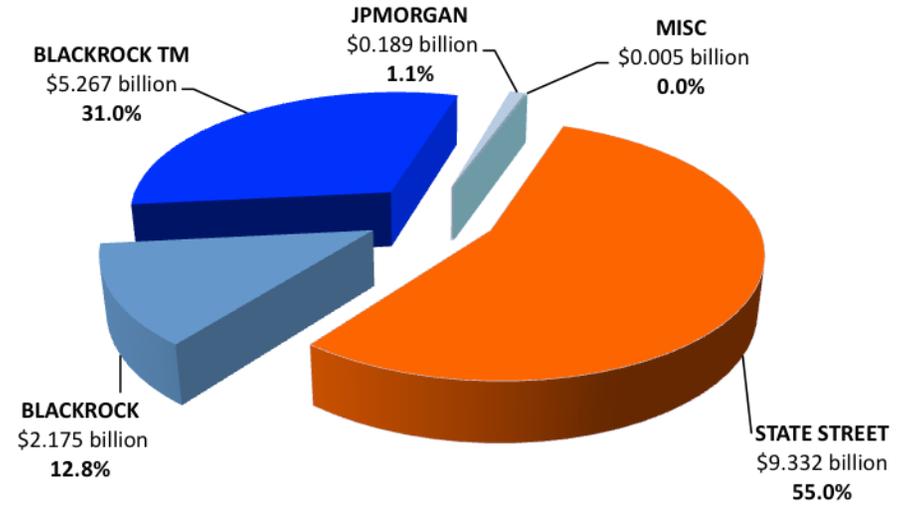
**SIF Funds by Mandate  
12/31/09**



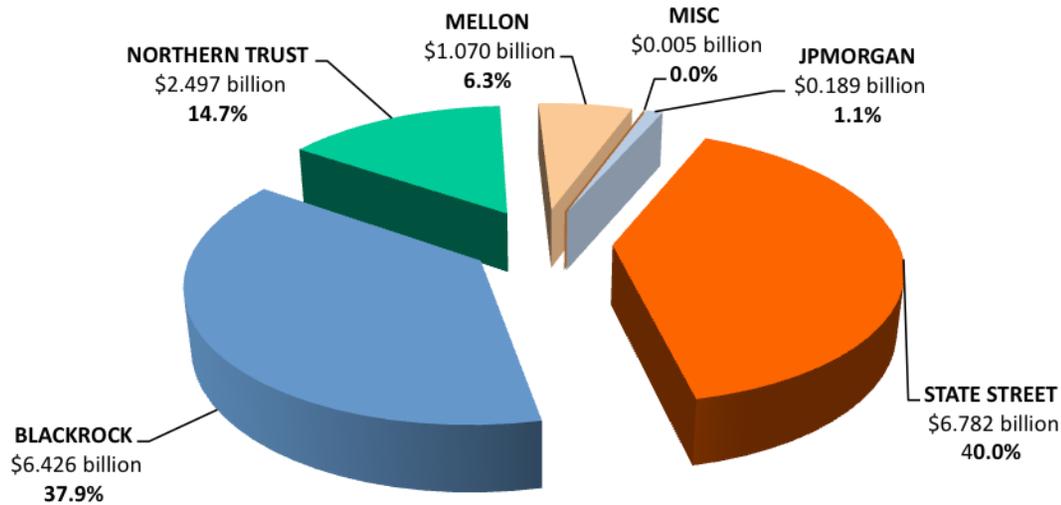
**SIF Funds by Manager  
6/30/09**



**SIF Funds by Manager  
12/31/09**



**SIF Funds by Target Manager\***



\*Anticipated Manager allocation upon completion in 1Q 2010 based on 12/31/09 market values

**Ohio Bureau of Workers' Compensation  
Invested Assets Market Value Comparison  
TOTAL FUNDS**

<u>Asset Sector</u>	<u>Market Value Dec 31, 2009</u>	<u>% Assets</u>	<u>Market Value Nov 30, 2009</u>	<u>% Assets</u>	<u>Increase(Decrease) Prior Month-End</u>	<u>% Change</u>	<u>Market Value June 30, 2009</u>	<u>% Assets</u>	<u>Increase (Decrease) Prior Fiscal Year-End</u>	<u>% Change</u>
Bonds	12,611,291,845	68.0%	12,932,117,136	68.6%	(320,825,291)	-2.5%	\$13,230,413,310	76.9%	(619,121,465)	-4.7%
Equity	5,589,097,909	30.1%	5,506,099,056	29.2%	82,998,853	1.5%	3,522,150,726	20.5%	2,066,947,183	58.7%
Net Cash - OIM	65,707,115	0.4%	53,212,881	0.3%	12,494,234	23.5%	27,624,432	0.2%	38,082,683	137.9%
Net Cash - Operating	238,000,840	1.3%	297,585,885	1.6%	(59,585,045)	-20.0%	366,634,742	2.1%	(128,633,902)	-35.1%
Net Cash - SIEGF	51,690,906	0.3%	54,921,033	0.3%	(3,230,127)	-5.9%	54,583,234	0.3%	(2,892,328)	-5.3%
Total Net Cash	355,398,861	1.9%	405,719,799	2.2%	(50,320,938)	-12.4%	448,842,408	2.6%	(93,443,547)	-20.8%
<b>Total Invested Assets</b>	<b>\$18,555,788,615</b>	<b>100%</b>	<b>\$18,843,935,991</b>	<b>100%</b>	<b>(\$288,147,376)</b>	<b>-1.5%</b>	<b>\$17,201,406,444</b>	<b>100%</b>	<b>\$1,354,382,171</b>	<b>7.9%</b>

**OIM:** Outside Investment Managers

**SIEGF:** Self-Insured Employers' Guaranty Fund

Market Value of Bonds and Stocks includes accrued investment income.

Net Cash includes the impact of net trade receivables/payables, accrued money market earnings, and accrued investment manager fees.

**December 2009/November 2009 Comparisons**

- Net investment income in December 2009 was a negative \$(166) million representing a monthly net portfolio return of -0.9% (unaudited).
- Bond market value decrease of \$(320.8) mm comprised of \$48.2 mm in interest income, \$(355.5) mm in OIM realized/unrealized losses (\$17.2 mm net realized gain), and by \$13.5 mm in OIM/TM net sales, representing a monthly net return of -2.4% (unaudited).
- Equity market value increase of \$83.0 mm comprised of \$6.9 mm of dividend income, \$133.6 mm in net realized/unrealized gains (\$32.6 mm net realized gain) and by \$0.5 mm in OIM/TM net purchases, offset by \$58.0 mm in portfolio redemptions for operations, representing a monthly net return of +2.6% (unaudited).
- Net cash balances decreased \$(50.3) mm in December 2009 largely due to decreased operating cash balances (\$59.6 mm).  
JPMorgan US Govt. money market fund had 30-day average yield of 0.07% for December 2009 (0.09% for Nov09) and 7-day average yield of 0.06% on 12/31/09 (0.07% on 11/30/09).

**December 2009/June 2009 FYTD Results**

- Net investment income for FYTD2010 was \$1,551 million comprised of \$376 mm of interest/dividend income and \$1,178 mm of net realized/unrealized gains (\$596 mm net realized loss), offset by \$3 mm in fees, representing a FYTD2010 net portfolio return of +9.1% (unaudited).
- Bond market value decrease of \$(619) mm for FYTD2010 comprised of \$330 mm in interest income and \$371 mm of net realized/unrealized gains (\$0 mm net realized gain/loss), offset by \$1,265 mm in OIM/TM net bond sales and \$55 mm in OIM rebalancing redemptions, representing a FYTD2010 net return of +5.3% (unaudited).
- Equity market value increase of \$2,067 mm for FYTD2010 comprised of \$43 mm in dividend income, \$807 mm in realized/unrealized gains (\$596 mm net realized loss), \$1,220mm in OIM/TM net purchases and \$55 mm in portfolio OIM rebalancing purchases, offset by \$58 mm in portfolio redemptions for operations, representing a FYTD2010 net return of +21.6% (unaudited).

# Ohio Bureau of Workers' Compensation Investment Asset Allocation - Combining Schedule As of December 31, 2009

(in thousands)

	SIF	% Trust	DWRF	% Trust	BLF	% Trust	PWRF	% Trust	MIF	% Trust	SIEGF	% Trust	ACF	% Trust	Totals	% of Total
<b>Bonds</b>	<b>\$ 11,445,149</b>	<b>67.3%</b>	<b>\$ 927,142</b>	<b>77.7%</b>	<b>\$ 197,414</b>	<b>77.4%</b>	<b>\$ 23,803</b>	<b>99.1%</b>	<b>\$ 17,784</b>	<b>98.3%</b>	<b>\$ -</b>	<b>0.0%</b>	<b>\$ -</b>	<b>0.0%</b>	<b>\$ 12,611,292</b>	<b>67.9%</b>
Long Credit	4,915,405	28.9%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	4,915,405	26.5%
Long Government	1,239,544	7.3%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	1,239,544	6.7%
Long Gov/Credit	-	0.0%	676,164	56.7%	144,878	56.8%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	821,042	4.4%
TIPS	2,917,981	17.2%	250,978	21.0%	52,536	20.6%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	3,221,495	17.4%
Aggregate	2,372,219	13.9%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	2,372,219	12.8%
Intermediate Gov/Credit	-	0.0%	-	0.0%	-	0.0%	23,803	99.1%	17,784	98.3%	-	0.0%	-	0.0%	41,587	0.1%
<b>Stocks</b>	<b>5,272,017</b>	<b>31.0%</b>	<b>261,572</b>	<b>21.9%</b>	<b>55,509</b>	<b>21.8%</b>	<b>-</b>	<b>0.0%</b>	<b>-</b>	<b>0.0%</b>	<b>-</b>	<b>0.0%</b>	<b>-</b>	<b>0.0%</b>	<b>5,589,098</b>	<b>30.2%</b>
Russell 3000	3,562,068	20.9%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	3,562,068	19.2%
MSCI ACWI ex-U.S.	1,699,972	10.1%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	1,699,972	9.2%
S&P 500	-	0.0%	261,142	21.9%	55,418	21.8%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	316,560	1.8%
Dividends Receivable	6,098	0.0%	430	0.0%	91	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	6,619	0.0%
Miscellaneous	3,879	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	3,879	0.0%
<b>Net Cash &amp; Cash Equivalents</b>	<b>294,164</b>	<b>1.7%</b>	<b>4,753</b>	<b>0.4%</b>	<b>2,126</b>	<b>0.8%</b>	<b>214</b>	<b>0.9%</b>	<b>316</b>	<b>1.7%</b>	<b>51,691</b>	<b>100.0%</b>	<b>2,135</b>	<b>100.0%</b>	<b>355,399</b>	<b>1.9%</b>
<b>Total Cash &amp; Investments</b>	<b>\$ 17,011,330</b>	<b>100.0%</b>	<b>\$ 1,193,467</b>	<b>100.0%</b>	<b>\$ 255,049</b>	<b>100.0%</b>	<b>\$ 24,017</b>	<b>100.0%</b>	<b>\$ 18,100</b>	<b>100.0%</b>	<b>\$ 51,691</b>	<b>100.0%</b>	<b>\$ 2,135</b>	<b>100.0%</b>	<b>\$ 18,555,789</b>	<b>100.0%</b>

Market value of bonds includes accrued investment income.

Net cash and cash equivalents includes the impact of net trade receivables/payables, accrued money market earnings, and accrued investment manager fees.

#### State Insurance Fund (SIF)

Overall SIF allocation to 70% bonds/30% stocks from 80% bonds/20% stocks was completed in December, 2009 (new asset allocation transitions began in July, 2009). Transitions included the Russell 3000, Barclays US Aggregate, the Long Credit/Government split and four tranches of the international equity mandate which completes the overall new asset allocation for SIF by asset class. Final placement transitions to approved target investment managers are anticipated to continue through First Quarter, 2010 as legal contracting and background verifications are completed.

The equity indices returns of the Russell 3000 (+2.85%), MSCI ACWI ex-U.S. (+2.11%) as well as the S&P 500 (+1.93%) benchmarks all increased for the month of December. This resulted in an overall increase in equity asset allocation from 30.0% to 31.0% over the month of December, 2009. All bond indices returns decreased in December: Barclays Capital Government Long Term Index (-5.32%), U.S. TIPS Index (-2.19%), Barclays Capital Credit Long Term Index (-1.70%) and U.S. Aggregate Bond Index (-1.56%). The negative bond performance combined with the positive performance in equities resulted in the overall reduction in bond asset allocation from 67.9% at end of November to 67.3% at end of December.

Cash allocations decreased from 2.1% at end of November to 1.7% at end of December largely due to a reduction in net SIF operating cash of \$60 million, despite a seasonal SIF portfolio redemption of \$50 million requested by the Fiscal and Planning Division to replenish cash needed for January, 2010 claim payments.

#### Disabled Workers' Relief and Coal Workers' Pneumoconiosis Funds (DWRF and BLF)

BWC Board of Directors' Investment Committee approved the Coal Workers' Pneumoconiosis Fund new asset allocation at the December, 2009 meeting. Further consultant (Mercer) presentations and approval of new asset allocation for Disabled Workers' Relief Fund are anticipated for the January, 2010 Investment Committee meeting.

#### PWRF, MIF, SIEGF

Mercer Consultant is anticipated to present initial asset allocation changes in February/March, 2010.

	Fund Asset Allocation:			Total
	Equity	Bonds	Cash	
SIF	30%	69%	1%	100%
DWRF	20%	79%	1%	100%
BLF	20%	79%	1%	100%
PWRF		99%	1%	100%
MIF		99%	1%	100%
SIEGF			100%	100%
ACF			Not Applicable	

SIF: State Insurance Fund

DWRF: Disabled Workers' Relief Fund  
BLF: Coal Workers' Pneumoconiosis Fund

PWRF: Public Workers' Relief Fund  
MIF: Marine Industry Fund

SIEGF: Self-Insured Employers Guaranty Fund  
ACF: Administrative Cost Fund

# Ohio Bureau of Workers' Compensation Investment Asset Allocation - Combining Schedule

As of November 30, 2009

(in thousands)

	SIF	% Trust	DWRF	% Trust	BLF	% Trust	PWRF	% Trust	MIF	% Trust	SIEGF	% Trust	ACF	% Trust	Totals	% of Total
<b>Bonds</b>	\$ 11,721,986	67.9%	\$ 962,105	78.6%	\$ 205,814	79.0%	\$ 24,161	99.1%	\$ 18,051	98.3%	\$ -	0.0%	\$ -	0.0%	\$ 12,932,117	68.5%
Long Credit	5,040,887	29.2%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	5,040,887	26.8%
Long Government	1,302,933	7.5%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	1,302,933	6.9%
Long Gov/Credit	-	0.0%	705,938	57.7%	152,192	58.4%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	858,130	4.6%
TIPS	2,978,307	17.3%	256,167	20.9%	53,622	20.6%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	3,288,096	17.4%
Aggregate	2,399,859	13.9%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	2,399,859	12.7%
Intermediate Gov/Credit	-	0.0%	-	0.0%	-	0.0%	24,161	99.1%	18,051	98.3%	-	0.0%	-	0.0%	42,212	0.1%
<b>Stocks</b>	\$ 5,187,038	30.0%	\$ 263,596	21.5%	\$ 55,465	21.3%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	\$ 5,506,099	29.3%
Russell 3000	3,925,221	22.7%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	3,925,221	20.8%
MSCI ACWI ex-U.S.	1,247,561	7.3%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	1,247,561	6.6%
S&P 500	-	0.0%	262,986	21.5%	55,337	21.3%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	318,323	1.8%
Dividends Receivable	10,360	0.0%	610	0.0%	128	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	11,098	0.1%
Miscellaneous	3,896	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	3,896	0.0%
<b>Net Cash &amp; Cash Equivalents</b>	<b>354,299</b>	<b>2.1%</b>	<b>(2,559)</b>	<b>-0.1%</b>	<b>(839)</b>	<b>-0.3%</b>	<b>223</b>	<b>0.9%</b>	<b>315</b>	<b>1.7%</b>	<b>54,921</b>	<b>100.0%</b>	<b>(640)</b>	<b>100.0%</b>	<b>405,720</b>	<b>2.2%</b>
<b>Total Cash &amp; Investments</b>	<b>\$ 17,263,323</b>	<b>100.0%</b>	<b>\$ 1,223,142</b>	<b>100.0%</b>	<b>\$ 260,440</b>	<b>100.0%</b>	<b>\$ 24,384</b>	<b>100.0%</b>	<b>\$ 18,366</b>	<b>100.0%</b>	<b>\$ 54,921</b>	<b>100.0%</b>	<b>\$ (640)</b>	<b>100.0%</b>	<b>\$ 18,843,936</b>	<b>100.0%</b>

Market value of bonds includes accrued investment income.

Net cash and cash equivalents includes the impact of net trade receivables/payables, accrued money market earnings, and accrued investment manager fees.

#### State Insurance Fund (SIF)

Overall SIF allocation from 80% bonds/20% stocks to 70% bonds/30% stocks planning/execution continued in November, 2009 (new asset allocation transitions began in July, 2009). Transitions are effectively complete for the Russell 3000, Barclays US Aggregate and the Long Credit/Government split. The final fourth tranche of the international equity transition (initiated in August 2009 with a targeted 10% policy allocation) will complete the overall new asset allocation for SIF by asset class. International equity full asset allocation as well as concluding transitions to final investment managers is anticipated throughout the remainder of 2009 and into First Quarter, 2010.

The Russell 3000 (+5.68%), MSCI ACWI ex-U.S. (+2.87%) as well as the S&P 500 (+6.0%) benchmarks increased in return for the month of November. This resulted in an overall increase in equity asset allocation from 29.2% to 30.0% over the month of November, 2009. The strong performance in equities caused a reduction in overall bond asset allocation. All bond indices returns increased as well with a strong Barclays U.S. TIPS Index (+2.78%) return followed by the Barclays Capital Government Long Term Index (+1.68%), U.S. Aggregate Bond Index (+1.29%), and Credit Long Term Index (+1.20%) returns.

Cash allocations decreased from 2.4% at end of October to 2.1% at end of November due to a reduction in SIF operating cash and by decreased investment manager cash balances.

#### Disabled Workers' Relief and Coal Workers' Pneumoconiosis Funds (DWRF and BLF)

Mercer Consultant presented the initial asset/liability studies at the November, 2009 BWC Board of Directors Investment Committee meeting. Further consultant presentations are anticipated to continue at the December meeting and into First Quarter, 2010.

#### PWRF, MIF, SIEGF

Possible asset allocation changes may occur with consultants' reviews in Fiscal Year 2010.

	Fund Asset Allocation:			Total
	Equity	Bonds	Cash	
SIF	30%	69%	1%	100%
DWRF	20%	79%	1%	100%
BLF	20%	79%	1%	100%
PWRF		99%	1%	100%
MIF		99%	1%	100%
SIEGF			100%	100%
ACF	Not Applicable			

SIF: State Insurance Fund

DWRF: Disabled Workers' Relief Fund

PWRF: Public Workers' Relief Fund

SIEGF: Self-Insured Employers Guaranty Fund

BLF: Coal Workers' Pneumoconiosis Fund

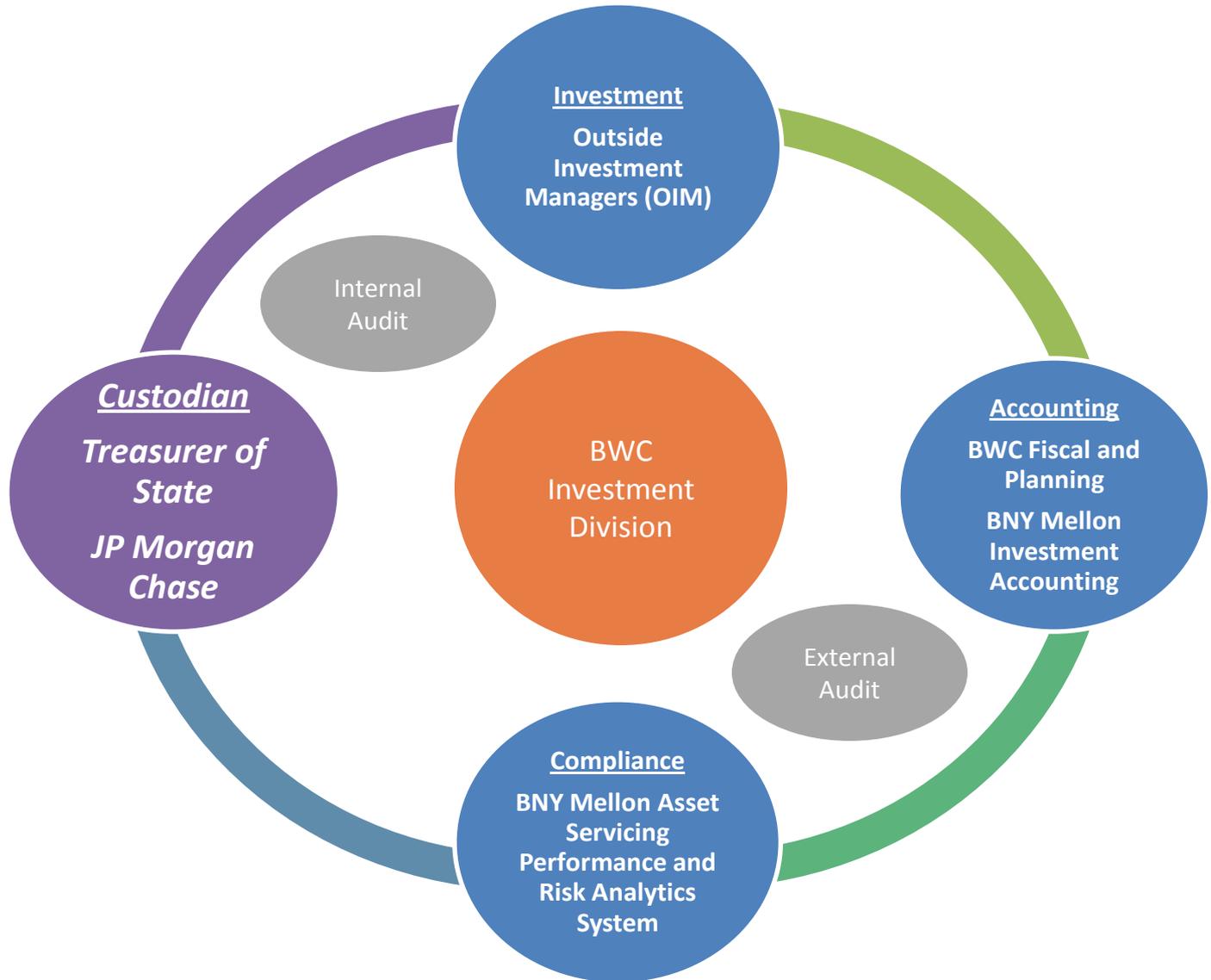
MIF: Marine Industry Fund

ACF: Administrative Cost Fund

# **Safekeeping BWC's Investment Assets**



Prepared by BWC Investment Division  
January 21, 2010



## Safekeeping BWC's Investment Assets

The Ohio Treasurer of State (TOS), as BWC's statutory custodian per the Ohio Revised Code (ORC 113.05), assigns the sub-custodian for the BWC through an RFP process every two years

- J.P. Morgan, as current sub-custodian to the TOS, is responsible for safekeeping, transaction/ trade and settlement/ income processing, asset reconciliation, and income/position reporting of depository assets such as stocks, bonds, commingled units, cash, and exchange-traded derivatives
- Other duties of J.P. Morgan include corporate and class action processing, accounting services, transition support, foreign tax reclaims, and records retention
- Non-depository asset duties are limited to accounting services and processing of income/proceeds for assets such as private equity partnerships, real estate, and non-exchange traded derivatives
- Annual approximate fees paid for custodial services: FY2009-\$662k, FY2008-\$710k, FY2007-\$487k, FY2006-\$1,157k, FY2005-\$1,727k, FY2004-\$1,678k

## The Role of the Custodian Separate and Commingled Accounts

- A **separate account** is an account which holds individual stocks and bonds, which are held in an account held at a depository for the direct benefit of BWC

### Passive

Long Duration Fixed Income - Credit (SIF)

Long Duration Fixed Income – Government (SIF)

U.S. Aggregate Fixed Income (SIF)

Russell 3000 (SIF)

TIPS (SIF, DWRF, COAL)

Long Duration Fixed Income – Government/Credit (DWRF and COAL)

- A **commingled** (a.k.a., collective or pooled) fund is a fund consisting of assets from several investors. Investors in commingled fund investments benefit from economies of scale, which generally allow for lower operational and trading costs

### Passive

ACWI ex-US (SIF)

S&P500 (DWRF and COAL)

Intermediate Duration Fixed Income (PWRF and MIF)

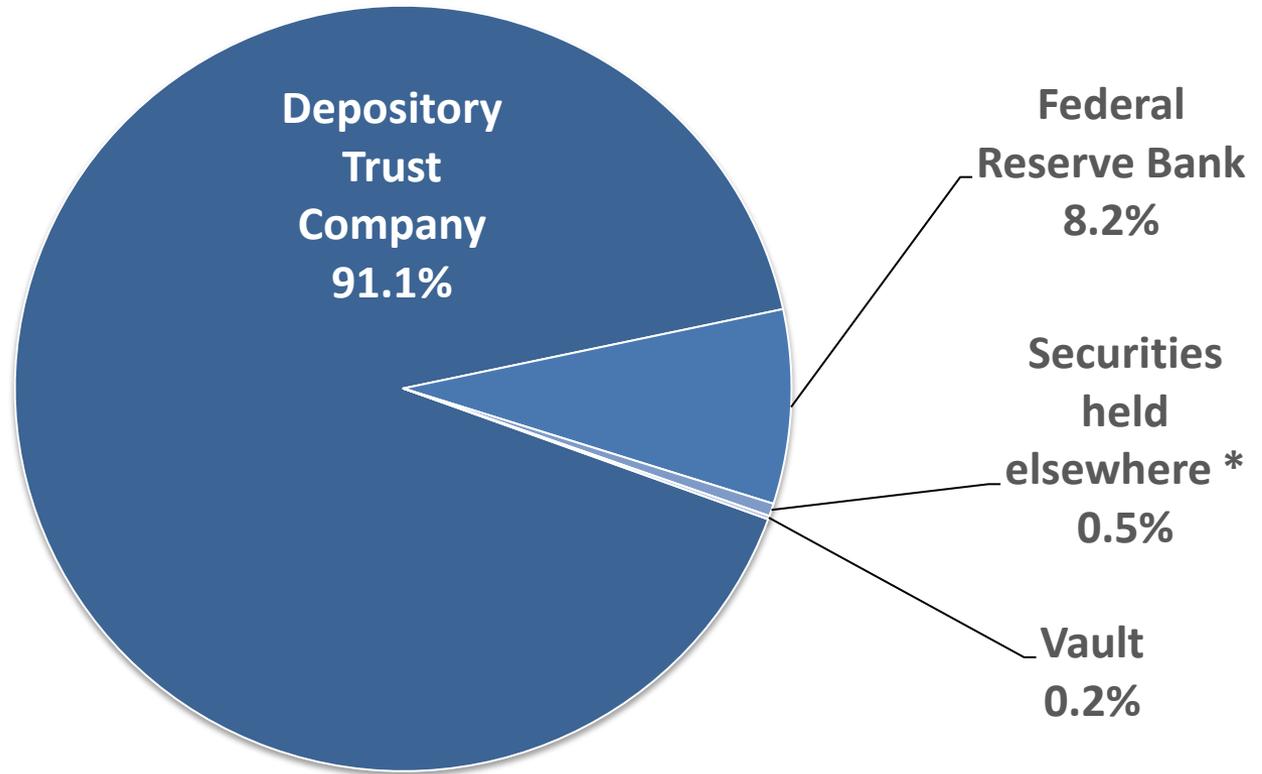
## Summary of Holdings - All Funds

Number of holdings - As of June 30, 2009

Fund	Depository Trust Company	Federal Reserve Bank	Securities held elsewhere	Vault	Total
SIF	1,687	160	9	5	1,861
DWRF	1,034	88	4	1	1,127
BLF	1,013	88	4	0	1,105
PWRF	0	0	2	0	2
MIF	0	0	2	0	2
SIEGF	1	0	1	0	2
<b>Total holdings</b>	<b>3,735</b>	<b>336</b>	<b>22</b>	<b>6</b>	<b>4,099</b>
<b>Market value</b>	<b>\$8.3 billion</b>	<b>\$7.8 billion</b>	<b>\$530 million</b>	<b>\$0 million</b>	<b>\$17 billion</b>

# Summary of Holdings – All Funds

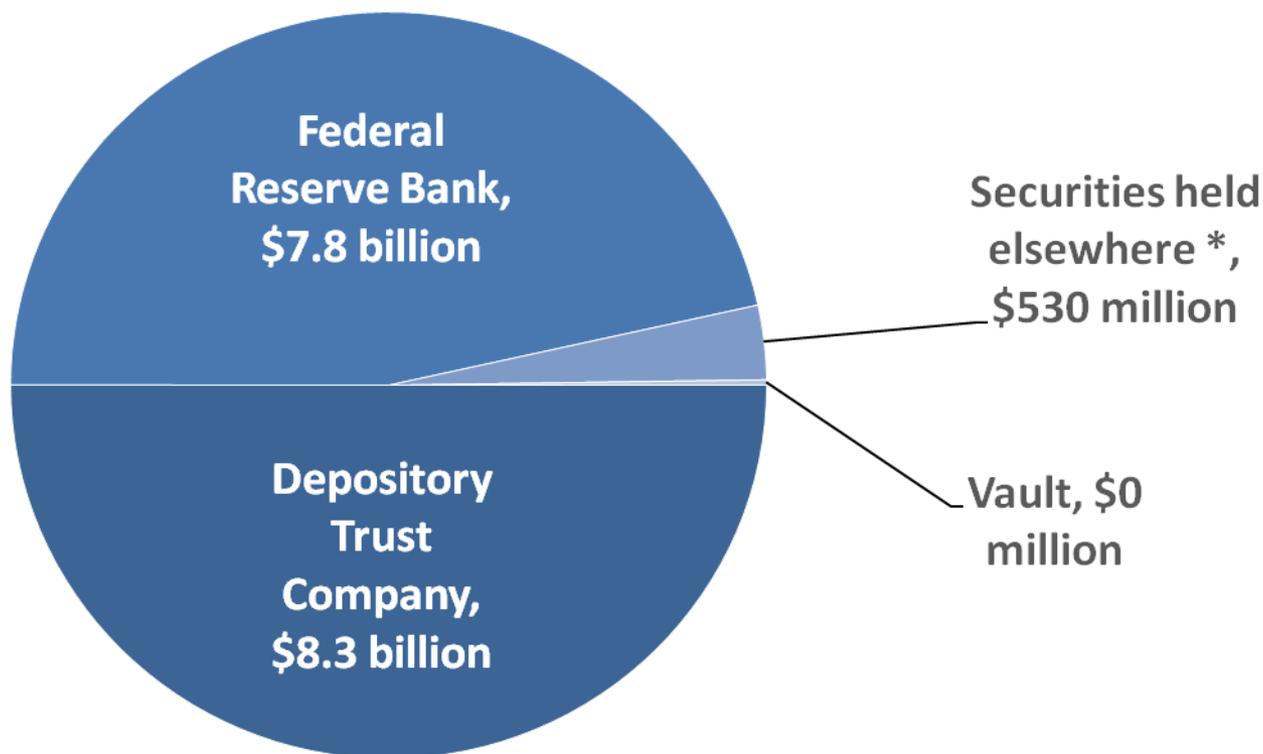
Number of holdings by category - As of June 30, 2009



\* Securities recorded by, but not held by, JPMorgan

## Summary of Holdings – All Funds

Market Value by Category - As of June 30, 2009



\* Securities recorded by, but not held by, JPMorgan

## Trade Operations – All Funds

Trade volume – Purchases, sales, and fails

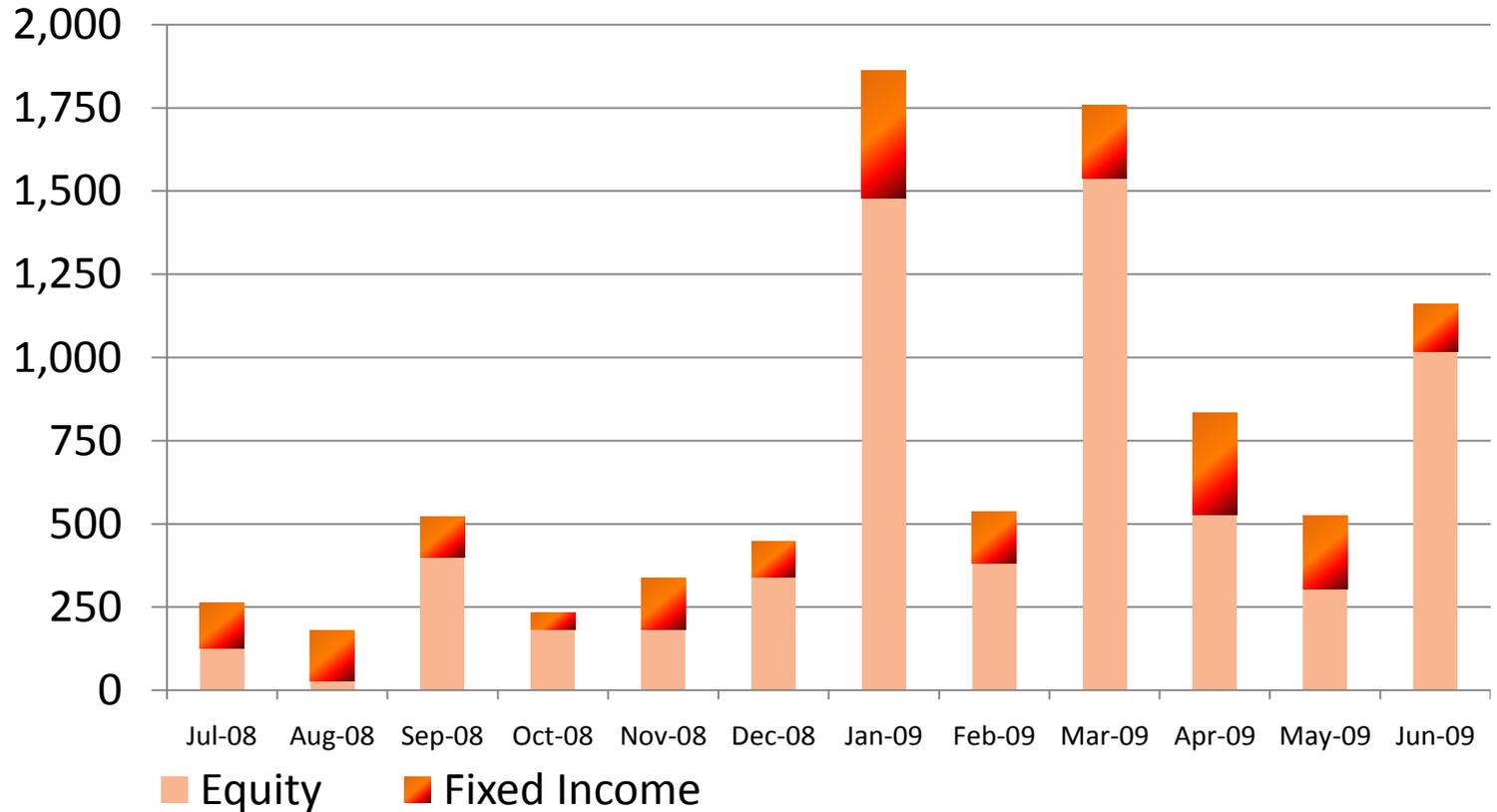
Month	Jul 08	Aug 08	Sep 08	Oct 08	Nov 08	Dec 08	Jan 09	Feb 09	Mar 09	Apr 09	May 09	Jun 09	Total	
<b>Purchases</b>	187	70	257	90	161	291	1,572	448	1,497	721	207	865	6,366	73.5%
<b>Sales</b>	75	111	265	144	176	156	290	89	262	113	318	296	2,295	26.5%
<b>Total</b>	<b>262</b>	<b>181</b>	<b>522</b>	<b>234</b>	<b>337</b>	<b>447</b>	<b>1,862</b>	<b>537</b>	<b>1,759</b>	<b>834</b>	<b>525</b>	<b>1,161</b>	<b>8,661</b>	<b>100.0%</b>
<b>Purchase Fails</b>	6.4%	7.1%	1.8%	5.6%	3.7%	0.3%	0.6%	2.7%	0.3%	0.7%	4.4%	0.4%	74	1.2%
<b>Sale Fails</b>	4.0%	0.0%	0.4%	2.1%	7.4%	57.1%	2.4%	1.1%	6.9%	0.9%	0.0%	1.0%	139	6.1%

Trade volume – Equity and Fixed Income

Asset Type	Jul 08	Aug 08	Sep 08	Oct 08	Nov 08	Dec 08	Jan 09	Feb 09	Mar 09	Apr 09	May 09	Jun 09	Total	
<b>Equity</b>	127	29	401	183	182	340	1,480	382	1,538	528	305	1,018	6,513	75.2%
<b>Fixed Income</b>	135	152	121	51	155	107	382	155	221	306	220	143	2,148	24.8%
<b>Total</b>	<b>262</b>	<b>181</b>	<b>522</b>	<b>234</b>	<b>337</b>	<b>447</b>	<b>1,862</b>	<b>537</b>	<b>1,759</b>	<b>834</b>	<b>525</b>	<b>1,161</b>	<b>8,661</b>	<b>100.0%</b>

# Trade Operations – All Funds

Trade volume – Equity and Fixed Income



- High trade volume months of January, March, April, and June due to S&P500 reconstitutions and BWC portfolio rebalances

## Trade Operations – All Funds

Trade settlement delays by age

	+1 Day	+2 Days	+3 Days	+4 Days	+5-7 Days	+8-10 Days	>+10 Days
<b>Purchase</b>	44	16	4	2	5	2	1
<b>Sale</b>	24	99	9	3	3	0	1
<b>Total</b>	68	115	13	5	8	2	2
<b>% of Total Trade Volume</b>	0.79%	1.34%	0.15%	0.06%	0.09%	0.02%	0.02%

- 97.5% of trades settle on scheduled settlement date
- Of the 2.5% of trades that do not settle on scheduled settlement date, 2.1% settle one or two days after the scheduled settlement date
- 99.6% of trades settle by scheduled settlement date plus two days

## Trade Operations – All Funds

Trade volume STeP – “Straight Thru electronic Processing”

Month	Jul 08	Aug 08	Sep 08	Oct 08	Nov 08	Dec 08	Jan 09	Feb 09	Mar 09	Apr 09	May 09	Jun 09	Total
<b>STeP</b>	261	87	513	230	240	356	1,844	519	1740	731	504	1,156	8,181
<b>Manual entry &amp; repaired</b>	1	94	9	4	97	91	18	18	19	103	21	5	480
<b>Total</b>	262	181	522	234	337	447	1,862	537	1,759	834	525	1,161	8,661
<b>Overall STeP rate (%)</b>	99.6	48.1	98.3	98.3	71.2	79.6	99.0	96.6	98.9	87.7	96.0	99.6	94.5

- The three main causes for STeP errors are invalid trading broker, clearing broker and/or invalid cusips input by OIM on trade ticket

## Income Payments – All Funds

Volume of annual income receipts

Payment Type	Pay Date		Pay Date + 1		Pay Date + 2		Pay Date + 3	
	Receipts	%	Receipts	%	Receipts	%	Receipts	%
<b>Dividend</b>	4,304	99.7%	3	0.1%	9	0.2%	0	0.0%
<b>Interest</b>	5,080	99.7%	10	0.2%	1	0.0%	2	0.1%
<b>Principal &amp; Interest</b>	41	73.2%	12	21.4%	1	1.9%	2	3.6%
<b>Grand total</b>	9,425	99.6%	25	0.3%	11	0.1%	4	0.0%

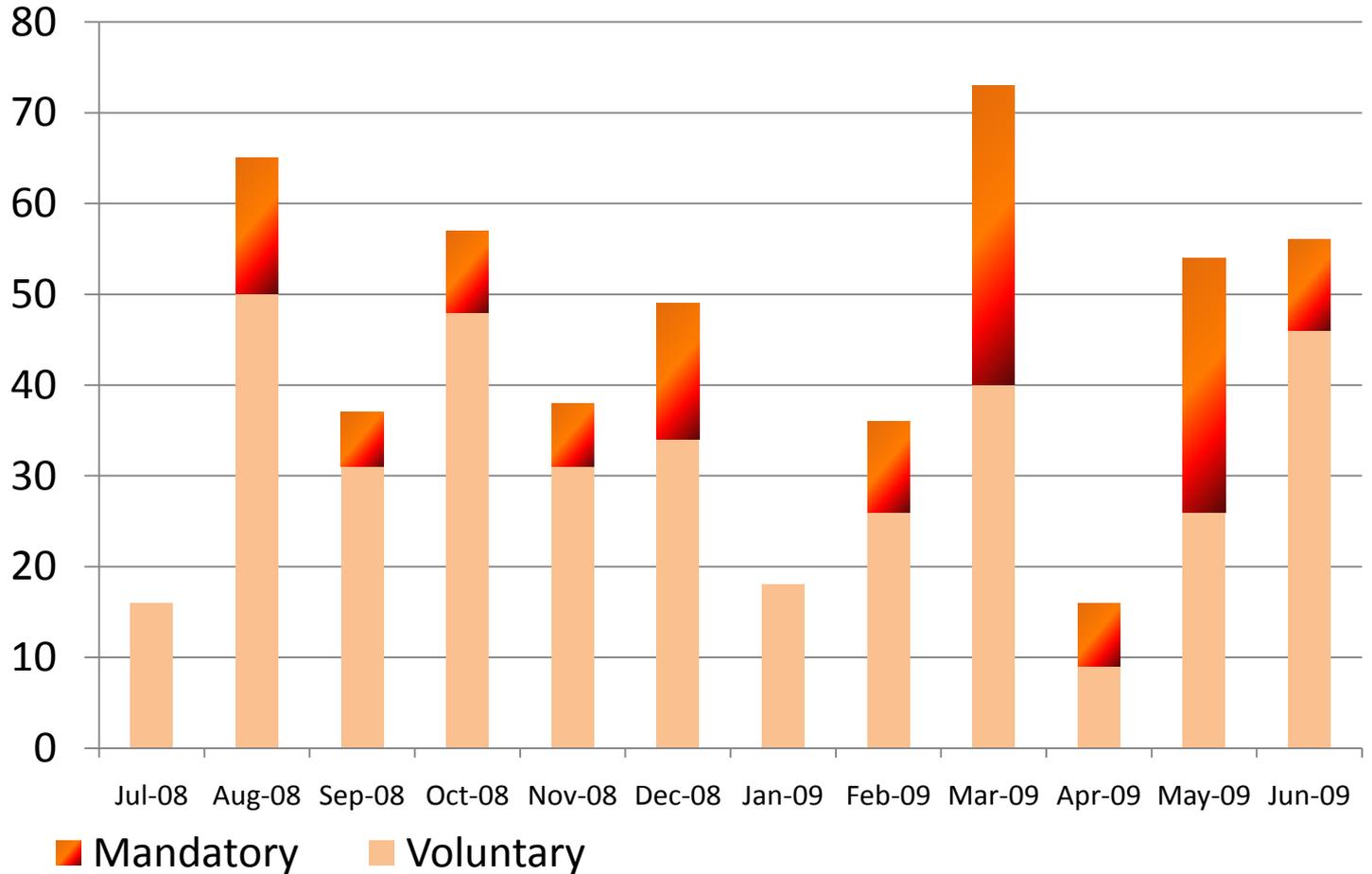
# Income Payments – All Funds

Value of annual income receipts

Payment Type	Pay Date		Pay Date + 1		Pay Date + 2		Pay Date + 3 or more	
	\$	%	\$	%	\$	%	\$	%
<b>Dividend</b>	\$74,005,032	99.8%	\$17,659	0.0%	\$125,157	0.2%	\$0	0.0%
<b>Interest</b>	\$672,943,878	99.8%	\$1,065,836	0.2%	\$10,000	0.0%	\$72,374	0.0%
<b>Principal &amp; Interest</b>	\$1,382,225	52.2%	\$1,147,587	43.3%	\$115,503	4.4%	\$4,039	0.2%
<b>Grand total</b>	\$748,331,135	99.7%	\$2,231,082	0.3%	\$250,660	0.0%	\$76,413	0.0%

# Corporate Actions – All Funds

Summary by action type



# Corporate Actions – All Funds

By category

(M) Mandatory (V) Voluntary

	#	%
US/PURCHASE OFFER-MINI TENDER STOCK (V)	94	18.3%
US/PURCHASE OFFER-ODD LOT (V)	66	12.8%
US/MERGER WITH OPTIONS (V)	39	7.6%
US/MERGER WITH DISSENTS (V)	38	7.4%
US/OTHER-MISCELLANEOUS (V)	35	6.8%
US/STOCK DIVIDEND (M)	35	6.8%
US/STOCK SPOFF (M)	28	5.4%
US/OPTIONAL STOCK DIVIDEND (V)	24	4.7%
US/EXCHANGE OFFER-144A RESTRICTED BOND (V)	20	3.9%
US/EXCHANGE OFFER-MANDATORY (M)	19	3.7%
US/PURCHASE OFFER-BOND (V)	16	3.1%
US/OTHER-REORGANIZATION (V)	13	2.5%

	#	%
US/BID TENDER-BOND (V)	12	2.3%
US/MERGER-CASH (M)	12	2.3%
US/PARTIAL CALL (M)	10	1.9%
US/MERGER-STOCK (M)	9	1.7%
US/REVERSE STOCK SPLIT (M)	9	1.7%
US/EXCHANGE OFFER (V)	6	1.2%
US/FULL CALL (M)	6	1.2%
US/MERGER-CASH AND STOCK (M)	6	1.2%
US/STOCK SPLIT (M)	6	1.2%
US/EXCHANGE OFFER-BOND (V)	5	1.0%
US/CONSENTS-TENDER (V)	4	0.8%
US/PURCHASE OFFER-MINI TENDER BOND (V)	3	0.6%

## Class Actions

- JPMorgan makes class action filings in BWC's name, pursuant to notifications of class actions that JPMorgan receives from multiple vendors
- BWC eligibility to participate in a particular class action suit is determined according to JPMorgan's custody records for BWC's accounts
- JPMorgan makes available to BWC and TOS, via its online application, a report for each class action lawsuit filing that it makes on behalf of BWC
- Once a suit is completed, JPMorgan receives, processes and reports class action proceeds on BWC's behalf
- In some instances, BWC may be a named plaintiff in a class action lawsuit initiated and led by the Office of the Attorney General of Ohio (AG). If so, JPMorgan is instructed to not take action on class actions. Instead, the AG will serve as BWC's legal counsel and assert and protect BWC's interests

# Class Actions Filed By Custodian

Filing volume by month

Month	Jul 08	Aug 08	Sep 08	Oct 08	Nov 08	Dec 08	Jan 09	Feb 09	Mar 09	Apr 09	May 09	Jun 09	Total
Class actions filed by account	10	51	19	4	39	20	41	5	49	39	4	20	301

- Forty-four separate class action lawsuits filed in FY2009

## Income

- In FY2009, the BWC received \$7.6 million in securities litigation income from 98 separate class action lawsuits in 130 separate accounts

	<u>Award to BWC</u>	<u>Award period</u>
• Enron	\$5.3 million	Dec. 2008–March 2009
• Tyco International	\$416,000	April 2009 – May 2009
• Asia Global Crossing	\$299,000	September 2008

## Quarterly Scorecard

- BWC's Investment Division, Treasurer of State, and BWC's Fiscal and Planning Division meet quarterly in-person with JPMorgan client relationship team to discuss and evaluate custodial services/issues and JPMorgan's self-graded performance
- Topics of discussion include:
  - Client Services
  - Trade Processing
  - Cash Processing
  - Accounting Statements
  - Transitions
  - Technology
  - Special Projects

## **Annual Assessment**

- BWC's Investment Division reports that JPMorgan's Custodial Services were "Satisfactory" for Fiscal Year 2009

## **Custodial Challenges in Fiscal Year 2010**

- Multiple asset transitions in the State Insurance Fund and the other Specialty Funds

**INVESTMENT DIVISION**

TO: Marsha Ryan, Administrator  
BWC Investment Committee  
BWC Board of Directors

FROM: Bruce Dunn, CFA, Chief Investment Officer

DATE: January 13, 2010

SUBJECT: CIO Report December, 2009

---

**Fiscal Year 2010 Goals**

The Investment Division has three major goals for the new fiscal year 2010. These goals and brief comments on action plans for each goal follow:

1. Provide support and execute new BWC Investment Policy resulting from investment consultant Asset-Liability studies.
2. Explore for investment consideration and subsequently initiate implementation processes pertaining to appropriate identified subject matters.
3. Continued establishment and execution of appropriate internal investment controls and compliance procedures.

**Strategic Goal One – PORTFOLIO TRANSITION**

BWC investment consultant Mercer completed an asset-liability study and related investment strategy recommendation for the State Insurance Fund that was approved by the Investment Committee and BWC Board of Directors at their respective March, 2009 meetings. A new Investment Policy Statement reflecting the new approved investment strategy target asset allocation for the State Insurance Fund was approved by the Investment Committee and BWC Board of Directors at their respective April, 2009 meetings.

As a result of these important actions, the Investment Division issued an RFP document on July 2, 2009 for Passive Index Management Services inviting proposals from qualified passive index investment managers for one or more of eight investment class mandates, six of which are the benchmark index mandates for the State Insurance Fund under its new targeted portfolio asset allocation as well as two holdover benchmark index mandates that remain applicable for the Disabled Workers Fund and the Coal Workers Fund.

The Bureau received four qualified responses to this RFP on August 4, 2009. The RFP Evaluation Committee has evaluated these RFP responses and is conducting a thorough and complete RFP evaluation process with the intention to present finalists for recommendation to the Investment Committee and Board of Directors at the monthly scheduled meetings over the period September through January, 2010.

During the interim period until these finalist managers are identified and ultimately approved by the Board and under contract, a detailed asset allocation transition implementation plan approved by the Investment Committee and BWC Board of Directors at their respective May, 2009 meetings is being executed by the Investment Division with recently approved BWC transition managers. This plan identified five distinct asset class transitions and prioritized each transition with an expected timeline. This plan will enable the State Insurance Fund to achieve its targeted asset class mandate exposure for its approved new asset class mandates (intermediate duration bonds, international equities, small/mid cap U.S. equities represented in the Russell 3000 index) months sooner than when new target asset managers can be funded.

The Investment Division will support investment consultant Mercer as necessary to perform and complete asset-liability studies on each of five speciality trust funds (Disabled Workers Fund, Coal Workers Fund, Public Work-Relief Employees Fund, Marine Industry Fund, Self Insured Employers Guarantee Fund) for the purpose of presenting investment strategy recommendations for each of these funds for consideration by the Investment Committee and Board.

The Investment Division will also provide assistance as desired by the Investment Committee in revising the BWC Investment Policy Statement to accommodate the implementation and execution of new asset class mandates for all affected BWC portfolios.

## **Strategic Goal Two – NEW INVESTMENT CONSIDERATIONS**

Over the course of fiscal year 2010, the Investment Division intends to explore for investment consideration certain additional identified asset classes as well as the potential employment of active investment management of certain to be identified asset classes. The employment of active management is closely associated with any prospective minority manager program to be implemented by the Investment Division upon consideration and approval by the Investment Committee and Board.

The Mercer asset-liability study for the State Insurance Fund presented to the Investment Committee in March, 2009 suggests in its Mix 5 strategy that a 5% asset allocation to high yield bonds and a further 5% asset allocation to alternative investments (2 ½% to each of private equity and real estate) provides a higher long-term expected portfolio rate of return and lower standard deviation of expected returns than alternative mixes presented in this Mercer study that either exclude one or both of these two asset classes.

A three-step phase timeline for addressing investment policy decisions was presented by Mercer in its asset-liability study that logically addresses each of these investment considerations mentioned above. The Investment Division is in the process of implementing Phase 1 presented in this study for the State Insurance Fund as reflected in the Investment Policy Statement revisions approved in April, 2009 by the Investment Committee and Board. It is anticipated that Phase 1 will largely be completed by sometime in the January-March, 2010 quarter. Phase 2 and Phase 3 presented in the Mercer study addresses high yield bonds, alternative investments, active management and minority manager engagement. Once Phase 1 is largely completed, the Investment Division will focus on Phase 2 and Phase 3 topics in close coordination with Mercer and the Investment Committee over the second half of fiscal year 2010 (Jan-June 2010). Appropriate and necessary education will be provided to the Investment Committee by Mercer working closely with the Investment Division.

One important additional subject that will be explored during the second half of fiscal year 2010 involves the daily cash management of all trust fund portfolios by the Investment Division. The BWC Fiscal and Planning Division currently manages all cash balances of each of these portfolios, including operating cash, with virtually all cash being invested in a single U.S. government money market fund managed by JP Morgan that is utilized as an overnight cash sweep vehicle. The Investment Division intends to explore expanding the use of other higher yielding money market funds available as well as direct investments in short-term money market investments (commercial paper, certificates of deposit, repurchase agreements, etc.) in order to improve investment income and returns on its cash investments while maintaining desired liquidity.

### **Strategic Goal Three – INTERNAL INVESTMENT PROCEDURES**

The Investment Division will continue to establish and improve upon internal investment policies and procedures. Such procedures will be written and mapped through the use of the Web Methods schematic mapping process. Among the procedures recently addressed in fiscal year 2010 were policies and procedures regarding the selection of transition managers. The BWC Internal Audit Division will be engaged as appropriate in auditing the Investment Division internal policies and processes.

The Investment Division has previously focused on establishing internal policies and processes on management oversight of the passive style investment managers, compliance, performance reporting, portfolio rebalancing, RFP/RFQ/RFI processes vendor invoice payments, as well as other investment activities to support the BWC Investment Policy. Internal processes will also be developed for the monitoring of active style investment managers in advance of the anticipated selection and engagement of any such managers as an outcome of any new active investment strategy approved. The formulation of proper detailed policies and processes with regards to potential Investment Division cash management of portfolio assets will also be essential.

### **Passive Index Management Services Master RFP**

There were four qualified responses received by the Bureau on August 4, 2009 for its RFP for Passive Index Management Services that was issued on July 2, 2009. This master RFP includes eight investment class mandates consisting of each of the six bond or stock benchmark index mandates under its new targeted portfolio asset allocation for the State Insurance Fund as well as two holdover benchmark index mandates that remain applicable for the Disabled Workers Fund and the Coal Workers Fund.

The four respondents to this RFP were Barclays, Mellon, Northern Trust and State Street. Three of these four respondents provided proposals on each of the eight distinct asset class mandates of the RFP. The other respondent provided proposals on all but one mandate, the exception being the international equities mandate.

The BWC RFP Evaluation Committee has completed the grading of the RFP proposals. The RFP Evaluation Committee has identified preliminary investment manager finalists for each of the six asset class mandates for the State Insurance Fund. Further due diligence analysis is conducted by members of the RFP Evaluation Committee with each prospective investment manager finalist for each mandate, including full-scale on-site meetings, before any investment manager finalists are confirmed by the RFP Evaluation Committee for presentation to the Investment Committee.

It is the intention of the Evaluation Committee to present investment manager finalists for the State Insurance Fund for recommendation to the Investment Committee and Board for consideration at the monthly scheduled meetings over the period September, 2009 through January, 2010. The Transition Activity Update section of this report that follows provides updated information on certain investment manager finalists approved by the Investment Committee and Board in the respective September, October, November and December, 2009 meetings.

Mercer completed and presented a strategic asset allocation analysis for the Coal Workers Fund at the December, 2009 Investment Committee meeting. A new asset allocation mix was approved for the Coal Workers Fund by the Investment Committee and BWC Board of Directors at their respective December, 2009 meetings. This new asset allocation mix maintained an 80/20 fixed income/equity asset allocation mix but added a new asset class for both fixed income (intermediate duration bonds) and equities (non-US equities). There will also be a strategic asset allocation analysis for the Disabled Workers Fund presented by Mercer at the January, 2010 Investment Committee meeting, with a recommendation for approval of a new asset allocation for this fund provided by the CIO and Mercer. This recommendation will also include the same two asset classes approved last month for the Coal Workers Fund, although the recommended asset allocation mixes differ between the two funds. If approval is provided by the Investment Committee and BWC Board of Directors at the respective January, 2010 meetings, the BWC RFP Evaluation Committee will then select investment manager finalists for each of the approved fixed income (excluding cash) and equities mandates for each of the Disabled Workers Fund and Coal Workers Fund. It is the intention of the Evaluation Committee to present the recommended finalist investment managers for these two specialty funds to the Investment Committee and Board for consideration at the scheduled February, 2010 meeting.

### **Transition Activity Update**

The Priority #1 Transition for the State Insurance Fund (SIF) involving the investment in fixed income securities of the broad Barclays Capital U.S. Aggregate Index commenced in late July, 2009 and was essentially completed in mid-August, 2009 by the transition manager chosen by the BWC Transition Manager Evaluation Committee. This U.S. Aggregate Index has a targeted 15% asset allocation for the SIF portfolio under its new Investment Policy Statement. A total of approximately \$2,327 million of invested assets were allocated to this transition whereby approximately \$2,204 million of assets at market value were contributed from the Long Government bond portfolio (mostly bonds with some cash) and the remaining approximately \$123 million in market value were contributed from the Long Credit bond portfolio. All of these Long Credit bonds were in-kind transferred to the transition account to be strategically retained by the transition manager to represent the long credit bond portion (approximately 5%) of the target U.S. Aggregate Index. Over approximately a three-week period, the BWC transition manager sold longer duration bonds received from the legacy Long Government bond portfolio and purchased shorter duration bonds represented in the target benchmark index. The transition manager reduced the duration of this \$2.3 billion transition account bond portfolio from 11.7 years to the target benchmark index duration of 4.4 years by the end of the second day of heavy trading. This significant achievement was accomplished by selling the longest duration bonds first and accumulating short duration securities and cash in order to achieve the portfolio duration target of the U.S. Aggregate bond index as quickly as feasible. Once the duration target of the target benchmark bond index was achieved, additional trading was conducted by the transition manager to both maintain the duration target of this transition account consistent with the target benchmark index while also continually reducing tracking error to the index by accumulating additional bonds represented in the target benchmark index for the transition account portfolio to better match the asset sector profile of the index.

Since mid-August 2009 when the Priority #1 Transition account portfolio was determined by the transition manager to be sufficiently correlated in performance to the target benchmark index, the BWC transition manager has been serving as an interim index investment manager for the Bureau. State Street Global Advisors (SSGA) was recommended by the RFP Evaluation Committee and approved by the Board as the single finalist investment manager for the U.S. Aggregate index mandate at the October, 2009 Board meeting. Necessary background checks on the identified index management team of the approved target asset manager(s) and legal contracting of the management services agreement were completed by late December, 2009, enabling the transition account assets to be transferred to SSGA as the chosen finalist target manager in late December, 2009. The net market asset value of the assets involved in this U.S. Aggregate index mandate transfer was approximately \$2.375 billion.

The Investment Division has now completed all four phases of the Priority #2 Transition for SIF involving investments in a targeted 10% asset allocation in non-U.S. equities of the All Country World Index (ACWI ex-US). The final fourth stage of this transition was completed in mid-December, 2009. The first three phases of this transition occurred between late August and early November, 2009. The BWC transition manager chosen by the BWC Transition Manager Evaluation Committee for this specific transition largely sold Long Government bonds (in first two transition phases) and TIPS (in third transition phase) that were all transferred in-kind to the new transition account for the purpose of funding the purchase of non-U.S. equities with approximate initial respective market values aggregating \$1,199 million to date. Each transition varied between \$375-425 million in assets sold to fund the international equities purchases. The final phase of this Priority #2 Transition involved the transfer of cash assets valued at approximately \$425 million raised from the sale of U.S. equities in the Priority #3 Transition account as directed by BWC. These assets sold consisted of U.S. equities benchmarked to the Russell 3000 index. These cash assets were transferred to the Priority #2 Transition account to fund this final purchase phase of non-U.S. equities to achieve its targeted 10% asset allocation for SIF. The reason for U.S. equities becoming the funding source for this final purchase phase for non-U.S. equities in the Priority #2 Transition was because the U.S. equities market value in the SIF portfolio began to exceed its 23% target asset allocation upper limit range due to its recent significant outperformance compared to the SIF fixed income asset classes. By the Investment Division exercising this funding strategy for this final phase of the Priority #2 Transition, the SIF portfolio was assured of being within its target ranges for each of its asset classes at the end of December, 2009 so that no portfolio rebalancing activity was necessary in early January, 2010. Legal requirements for some of the underlying emerging market country non-securities lending commingled funds being launched as well as the master commingled fund being launched that BWC will invest in are currently being addressed by the Board approved single finalist investment manager (BlackRock, formerly Barclays Global Investors). It appears that legal requirements for these new funds will be completed in the Jan-Feb 2010 timeframe, at which time the Priority #2 Transition account assets will be transferred to BlackRock as finalist investment manager.

The Priority #3 Transition for SIF involving the transition of the domestic U.S. equity portfolio (\$3.8 billion market value) was executed in October, 2009 by the transition manager chosen by the BWC Transition Manager Evaluation Committee. This transition included a change in the benchmark index for this 20% targeted asset allocation mandate to the broad Russell 3000 Index from the large-cap stock S&P 500 Index. All 500 stocks held in the SIF S&P 500 index separate account managed by Northern Trust (valued at \$3.75 billion) were transferred in-kind to the transition account. The transition manager implemented the Priority #3 Transition by selling a portion (15-20% on average) of each of the S&P 500 stocks received into the transition account in order to fund many of the mid-cap and small-cap stocks represented in the Russell 3000 index. These sales aggregated \$715 million in market value. This transition manager retained the remaining shares of each of the S&P 500 stocks as those stocks are included in the Russell 3000 index and represent approximately 85% of the total current market value of the benchmark index. As mentioned in the preceding comments regarding the Priority #2 Transition, approximately \$425 million in cash from sale proceeds of assets were transferred out of the Priority #3 Transition account in mid-December, 2009 to fund the final purchase phase of the Priority #2 Transition.

Northern Trust Global Investments was recommended by the RFP Evaluation Committee and approved by the Board in December, 2009 as a passive index manager for the SIF U.S. Equities mandate for a targeted 14% asset allocation. A second passive index manager for the SIF U.S. equities mandate for the remaining 6% targeted asset allocation of this asset class will be presented for Board approval in January, 2010. Legal contracting and background checks are proceeding with all approved SIF investment managers. It is the goal of the Investment Division that all necessary SIF asset class transfers to approved finalist investment managers will be completed during the first quarter of 2010.

### **Compliance**

The investment portfolios were in compliance with the BWC Investment Policy at the end of December, 2009.

# 12-month Investment Committee Calendar

Date	January	Notes
1/21/2010	<ol style="list-style-type: none"> <li>1. SIF Passive Indexed Investment Manager RFP finalists recommendation, possible vote</li> <li>2. Specialty Funds (DWRF, Coal) Asset Allocation Analysis report and recommendation, third review, possible vote on DWRF new asset allocation</li> <li>3. Custodian Fiscal Year 2009 Annual Review</li> <li>4. SIF Transition Activity Update (in CIO Report)</li> </ol>	
Date	February	
2/25/2010	<ol style="list-style-type: none"> <li>1. Specialty Funds (DWRF, Coal) Passive Indexed Investment Manager RFP Finalist recommendations, possible vote</li> <li>2. Specialty Funds (MIF, PWRF) Asset Allocation Analysis report and recommendation, first review, possible vote on asset allocation</li> <li>3. Investment Consultant Performance Report 4Q09</li> <li>4. SIF Transition Activity Update (in CIO Report)</li> <li>5. Economist Presentation - Professor Sam Thomas (Case Western Reserve Univ)</li> </ol>	
Date	March	
3/25/2010	<ol style="list-style-type: none"> <li>1. Investment Consultant contract renewal, possible vote</li> <li>2. SIF Transition Activity Update (in CIO Report)</li> <li>3. Possible education session, topic to be determined</li> </ol>	
Date	April	
4/29/2010	<ol style="list-style-type: none"> <li>1. Possible education session, topic to be determined</li> </ol>	
Date	May	
5/27/2010	<ol style="list-style-type: none"> <li>1. Investment Consultant Performance Report 1Q10</li> <li>2. Possible education session, topic to be determined</li> </ol>	
Date	June	
6/17/2010		

# 12-month Investment Committee Calendar

Date	July	Notes
7/29/2010		
Date	August	
8/26/2010	<ol style="list-style-type: none"> <li>1. BWC Investment Division Goals FY2011</li> <li>2. Investment Consultant Performance Report 2Q10</li> <li>3. Specialty Funds (SIEGF) Asset Allocation Analysis report and recommendation, first review, possible vote on asset allocation</li> </ol>	
Date	September	
9/23/2010	<ol style="list-style-type: none"> <li>1. Brokerage Activity Fiscal Year 2010 summary report</li> </ol>	
Date	October	
10/21/2010		
Date	November	
11/18/2010	<ol style="list-style-type: none"> <li>1. Investment Consultant Performance Report 3Q10</li> <li>2. Custodian Fiscal Year 2010 Annual Review</li> </ol>	
Date	December	
12/15/2010		

**BWC Invested Assets**  
 Estimated and Unaudited  
 As of January 20, 2010

Jan10 MV Increase Bonds..... + \$ 218 million (+1.7% return)  
 Jan10 MV Increase Equities..... + \$ 135 million (+2.4% return)

Jan10 MV Increase Bonds+Equities..... + \$ 353 million  
 (+1.9% Jan10 MTD portfolio return including Cash)

BWC Asset Allocation MV 1/20/10

Bonds*.....	\$12,896 million	68.6%
Equities*.....	5,724 million	30.4%
Cash.....	<u>179 million</u>	<u>1.0%</u>
TOTAL.....	\$18,799 million	100.0%

\* includes nominal cash held by outside managers

Portfolio Return Calendar 2008..... -2.3% (-\$444 million net inv. income)  
 Portfolio Return Fiscal Year 2009..... -1.1% (-\$195 million net inv. income)  
 Portfolio Return Calendar 2009..... +8.6% (+\$1,505 million net inv. income)

Fiscal Year 2010 YTD

Portfolio Return July-Dec09..... + 9.1% (+\$1,551 million net inv. income)

**Prepared by: Bruce Dunn, CFA**  
**BWC Chief Investment Officer**