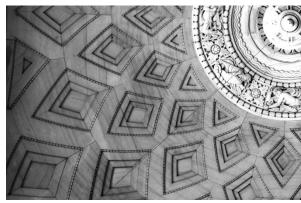


ARCHITECTS OF INVESTMENT SOLUTIONS





# **State of North Carolina**

# STATE OF NORTH CAROLINA

TABLE OF CONTENTS

**SECTION I:** Galliard Capital Management Firm Update

**SECTION II:** State of North Carolina Stable Value Fund Portfolio Review

**SECTION III:** Relationship Milestones & Expense Disclosure

# SECTION I

## **GALLIARD CAPITAL MANAGEMENT**

WHO WE ARE

### CLIENT ALIGNED STABLE VALUE & FIXED INCOME INVESTMENT SOLUTIONS FOR OVER 20 YEARS

\$91.0 B

\$79.5 B
TOTAL STABLE VALUE AUM

115+ stable value separate accounts

111 EMPLOYEES ON STAFF SENIOR PROFESSIONALS AVERAGE YEARS OF EXPERIENCE:

Stable value portfolio management team  $-\,2\,4$ 

Fixed income team - 20

Contract management & negotiation team — 23

STABLE VALUE & FIXED INCOME PRODUCTS • SEPARATE ACCOUNTS • COLLECTIVE FUNDS







10 new clients YTD

\$5.1 B new assets YTD

25 Fortune 100 clients

**57** Fortune 500 clients

CLIENT TYPES CORPORATE •

FOUNDATIONS ENDOWMENTS

HEALTHCARE

INSURANCE

OPERATING

PUBLIC

TAFT-

HIGHLIGHTS

Galliard is now a signatory to the United Nationssupported **Principles for Responsible Investment**  Galliard ranked in the top 10 in Pensions & Investments report of largest managers of assets held by 100 largest corporate DC plans

(*The Corporate DC 100: The Largest Money Managers*, published March 7, 2016)

Galliard ranked #2 by total AUM in the Pensions & Investments rankings of stable value managers

(*Largest Money Managers Report*, published May 29, 2017, data as of December 31, 2016)

Data as of 12/31/17



# SECTION II

## Fourth Quarter 2017

### ANNUALIZED INVESTMENT PERFORMANCE<sup>1</sup>

Period Ending December 31, 2017

Book Value Performance	1 Mo	3 Mo	1 Yr	3 Yr	5 Yr	Since Inception <sup>4</sup>
Portfolio (net of all fees - NAV level) <sup>2</sup>	0.18	0.52	2.00	1.94	1.95	2.27
Benchmark <sup>3</sup>	0.24	0.66	2.38	1.93	1.78	1.74
3 Year Constant Maturity Treasury	0.16	0.45	1.58	1.20	1.01	0.88

### **CALENDAR YEAR PERFORMANCE**

Book Value Performance	2017	2016	2015	2014	2013
Portfolio (net of all fees - NAV level) <sup>2</sup>	2.00	1.95	1.87	1.80	2.15
Benchmark <sup>3</sup>	2.38	1.84	1.56	1.55	1.58
3 Year Constant Maturity Treasury	1.58	1.01	1.03	0.90	0.54
MARKET INDICES					
BofAML US 3-Mon T-Bill	0.86	0.33	0.05	0.03	0.07
Consumer Price Index	2.17	2.07	0.73	0.76	1.51

<sup>1:</sup> Returns for periods of less than one year are not annualized.

<sup>2:</sup> Returns are net of all fees, including plan administrative reimbursement.

<sup>3:</sup> The BofA Merrill Lynch US 3-Month Treasury Bill Index+150 Basis Points

<sup>4:</sup> Galliard assumed management of this portfolio on Dec 01, 2010. Performance for periods referenced prior to this date include historical performance of another investment advisor.

# **STATE OF NORTH CAROLINA**

## SUPPLEMENTARY PERFORMANCE INFORMATION

## FOURTH QUARTER 2017

Fund Component	Benchmark Component	4Q'17 Weight	Portfolio Contribution to Gross Return	Portfolio Contribution to Net Return	Benchmark Contribution to Total Return
WF Adv Government Money Market	BofA Merrill Lynch U.S. 3 Month T-Bill	0.8%	0.002	0.002	0.003
Wells Fargo Stable Return Fund	50% BofA Merrill Lynch 1-3 Year U.S. Treasury Index, 50% Citigroup 3 Month T-Bill	6.5%	0.033	0.033	0.001
Dodge & Cox – ISA	Bloomberg Barclays U.S. Intermediate Aggregate Bond Index	13.0%	0.027	0.024	(0.009)
Jennison – WF CTF 'N'	Bloomberg Barclays U.S. Intermediate Government/Credit Bond Index	14.0%	0.003	(0.001)	(0.028)
Prudential – FI SA	Bloomberg Barclays U.S. Intermediate Aggregate Bond Index	14.3%	0.011	0.007	(0.010)
Payden & Rygel – FI SA	Bloomberg Barclays U.S. 1-3 Year Government/Credit Bond Index	14.7%	(0.008)	(0.013)	(0.031)
Galliard – WF CTF 'F'	Bloomberg Barclays U.S. 1-3 Year Government Bond Index	16.8%	0.005	0.004	(0.046)
Great West – ISA	Bloomberg Barclays U.S. Intermediate Aggregate Bond Index	20.0%	0.005	0.003	(0.014)
Total Fund Market Value Return			0.079	0.059	(0.135)



Fourth Quarter 2017

### PORTFOLIO CHARACTERISTICS

Total Assets\$2,535,109,093Blended Yield (After fees)\*2.10%Average Holdings Quality\*\*AAEffective Duration3.15 yearsNumber of Contract Issuers5Market/Book Value Ratio100.34%

### **SECTOR DISTRIBUTION**

		% OF PORTFOLIO	% OF PORTFOLIO
PORTFOLIO DISTRIBUTION	CONTRACT VALUE (\$)	12/31/2017	09/30/2017
Cash & Equivalents*	20,830,116	0.8	0.6
WF SRF	166,432,107	6.6	6.7
Separate Account GICs	838,099,025	33.1	33.1
Intermediate Portfolio	838,099,025	33.1	33.1
Security Backed Investment Contracts	1,509,747,846	59.6	59.6
Short Portfolio	803,505,779	31.7	31.7
Intermediate Portfolio	706,242,067	27.9	27.8
Total	\$2,535,109,093	100.0%**	100.0%**

<sup>\*</sup>Blended yield is after investment management fees and wrap fees.

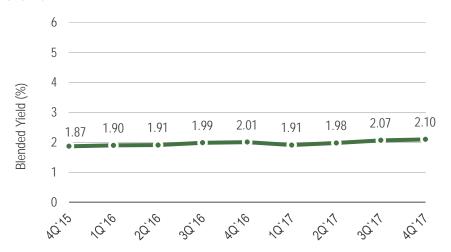
<sup>\*\*</sup>The Weighted Average Quality of the portfolio has NOT been assessed by a nationally recognized statistical rating organization. The Weighted Average Quality shown represents an average quality of the contracts and cash held by the portfolio as rated by S&P and Moody's.

<sup>\*</sup>Includes Receivables and Payables

<sup>\*\*</sup>Total % of portfolio may not add to 100% due to rounding

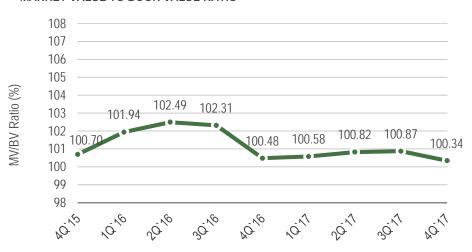
### Fourth Quarter 2017

#### HISTORICAL BLENDED YIELD\*

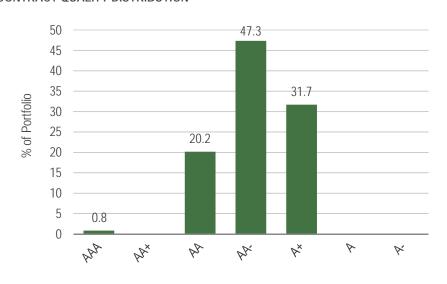


#### \*\*Blended yield is after investment management fees, wrap fees and administration fees..

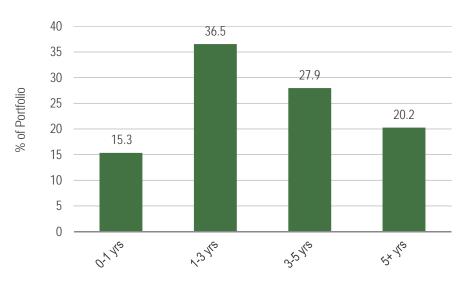
#### MARKET VALUE TO BOOK VALUE RATIO



#### CONTRACT QUALITY DISTRIBUTION\*



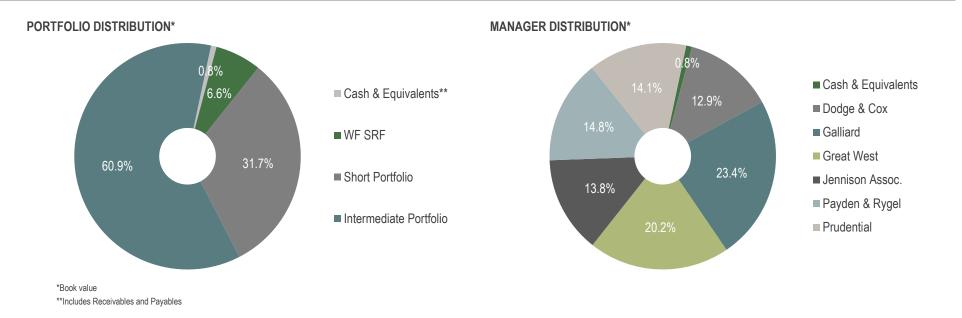
#### UNDERLYING DURATION DISTRIBUTION\*\*



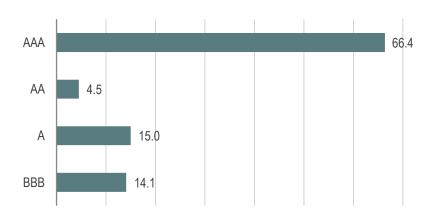
<sup>\*</sup>Total % of portfolio may not add to 100% due to rounding. The quality distribution shown represents the distribution of the individual holdings' Composite Ratings, as rated by S&P, Moody's and Fitch.

<sup>\*\*</sup>Total % of portfolio may not add to 100% due to rounding. Duration distribution of the externally managed portfolios is provided by the external manager.

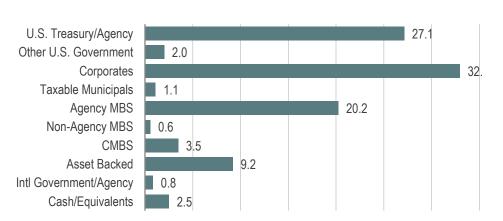
Fourth Quarter 2017



#### UNDERLYING FIXED INCOME CREDIT QUALITY\*



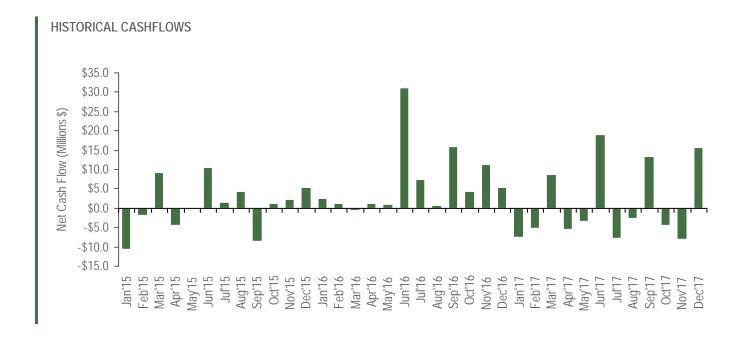
#### UNDERLYING FIXED INCOME ASSET ALLOCATION\*\*



<sup>\*</sup>Market value. Total % of portfolio may not add to 100% due to rounding. The quality distribution shown represents the distribution of the individual holdings' Composite Ratings, as rated by S&P, Moody's and Fitch. Ratings shown as NR/NA are not rated or not available security ratings. The external managers provide portfolio holdings, and the securities are classified using Galliard's analytics and methodology

<sup>\*\*</sup>Market value. Total % of portfolio may not add to 100% due to rounding. The external managers provide portfolio holdings, and the securities are classified using Galliard's analytics and methodology for maximum comparability across managers.

## Fourth Quarter 2017



	2017	2016***	2015	2014	2013
Beginning Assets	\$2,472.8	\$1,948.6	\$1,904.2	\$1,870.9	\$1,829.1
Net Cash Flow (\$)*	\$12.2	\$81.5	\$8.8	-\$0.3	\$2.4
Net Cash Flow (%)	0.49%	4.18%	0.46%	-0.02%	0.13%
Estimated Investment Earnings	\$50.1	\$46.9	\$35.7	\$33.6	\$39.4
Ending Assets**	\$2,535.1	\$2,472.8	\$1,948.6	\$1,904.2	\$1,870.9

<sup>\*</sup>Contributions, Withdrawals and Investment Transfers

<sup>\*\*</sup>Cashflows may not net to final assets due to rounding.

<sup>\*\*\*</sup>Approximately \$395.8m of net inflow and transfer activity related to the 1/4/2016 merger of North Carolina 457 plan assets have been removed for illustrative purposes.

## STATE OF NORTH CAROLINA STABLE VALUE FUND

MARKET VALUE PERFORMANCE SUMMARY

### FOURTH QUARTER 2017

#### SHORT DURATION

Manager	3 Months	1 Year	3 Years	5 Years	Since Inception	Inception
Payden & Rygel	-0.05%	1.32%	1.18%	1.10%	1.93%	7/1/2009
Bloomberg Barclays U.S. 1-3 Yr. Govt/Credit	<u>-0.21%</u>	0.84%	0.93%	0.84%	<u>1.37%</u>	
	0.16%	0.48%	0.25%	0.26%	0.56%	
0.11:14	0.000/	1 500/	1 410/	1 100/	1.000/	1/1/0010
Galliard*	0.02%	1.52%	1.41%	1.16%	1.90%	1/1/2010
Bloomberg Barclays U.S. 1-3 Yr. Gov't/Credit**	-0.21%	0.84%	0.93%	0.84%	<u>1.23%</u>	
	0.23%	0.68%	0.48%	0.32%	0.67%	

#### INTERMEDIATE DURATION

Manager	3 Months	1 Year	3 Years	5 Years	Since Inception	Inception
Dodge & Cox	0.21%	3.19%	-	-	2.09%	3/1/2015
Bloomberg Barclays U.S. Intermediate Aggregate	<u>-0.07%</u>	2.27%	-	-	<u>1.62%</u>	
	0.28%	0.92%	-	-	0.47%	
Creat Mart Life***	0.030/	0.040/	1.070/	1 700/	0.100/	10/1/2011
Great-West Life***	0.03%	2.24%	1.87%	1.72%	2.19%	10/1/2011
Bloomberg Barclays U.S. Intermediate Aggregate****	<u>-0.07%</u>	2.08%	1.67%	<u>1.57%</u>	<u>1.88%</u>	
	0.10%	0.16%	0.20%	0.15%	0.31%	
Jennison	0.02%	2.56%	2.01%	1.69%	2.66%	8/1/2010
Bloomberg Barclays U.S. Intermediate Govt/Credit	-0.20%	2.14%	1.76%	1.50%	2.33%	07.172010
,	0.22%	0.42%	0.25%	0.19%	0.33%	
Prudential	0.08%	2.87%	-	-	2.43%	2/1/2016
Bloomberg Barclays U.S. Intermediate Aggregate	<u>-0.07%</u>	2.27%	-	-	1.55%	
	0.15%	0.60%	-	-	0.88%	

<sup>\*\*\*\*</sup>Linked Benchmark: Prior to 7/1/17 was Bloomberg Barclays U.S. Intermediate Aggregate A or Better.



<sup>\*</sup>Returns shown are after investment management fees.

<sup>\*\*</sup>Index being shown for comparison purposes only, the fund is managed to a targeted duration.

<sup>\*\*\*</sup>Performance shown was provided by Great West.

## STATE OF NORTH CAROLINA STABLE VALUE FUND

MANAGER-LEVEL CHARACTERISTICS

## FOURTH QUARTER 2017

Segment	Manager	Period	Book Value	Market Value	MV/BV Ratio	Market Value Yield	Duration (Years)	Book Value Crediting Rate*
Short Duration	Payden & Rygel	9/30/2017	\$ 374,165,464	\$ 374,552,345	100.1%	1.79%	1.71	1.58%
		12/31/2017	\$ 375,898,664	\$ 374,353,657	99.6%	2.16%	1.61	1.65%
			\$ 1,733,201	\$ (198,687)	-0.5%	0.37%	(0.10)	0.07%
	Galliard	9/30/2017	\$ 425,456,957	\$ 425,903,028	100.1%	1.94%	1.85	1.81%
		12/31/2017	\$ 427,607,115	\$ 426,005,781	99.6%	2.25%	1.86	1.81%
			\$ 2,150,158	\$ 102,753	-0.5%	0.31%	0.01	0.00%
Intermediate Duration	Prudential	9/30/2017	\$ 354,224,416	\$ 362,521,737	102.3%	2.60%	4.16	2.71%
		12/31/2017	\$ 356,952,334	\$ 362,784,663	101.6%	2.85%	4.19	2.76%
			\$ 2,727,919	\$ 262,927	-0.7%	0.25%	0.03	0.05%
	Dodge & Cox	9/30/2017	\$ 324,772,952	\$ 330,025,585	101.6%	2.51%	3.74	2.59%
		12/31/2017	\$ 326,929,548	\$ 330,438,747	101.1%	2.72%	3.70	2.66%
			\$ 2,156,596	\$ 413,161	-0.5%	0.21%	(0.04)	0.07%
	Great West Life	9/30/2017	\$ 508,497,844	\$ 508,005,593	99.9%	2.34%	4.00	2.11%
		12/31/2017	\$ 511,169,477	\$ 507,885,076	99.4%	2.56%	3.91	2.10%
			\$ 2,671,633	\$ (120,517)	-0.5%	0.22%	(0.09)	-0.01%
	Jennison	9/30/2017	\$ 346,894,777	\$ 355,020,409	102.3%	2.06%	4.20	2.71%
		12/31/2017	\$ 349,289,732	\$ 354,996,860	101.6%	2.34%	4.16	2.76%
			\$ 2,394,956	\$ (23,549)	-0.7%	0.28%	(0.04)	0.05%
Total Fund		9/30/2017	\$ 2,518,727,516	\$ 2,540,743,804	100.9%	2.18%	3.19	2.20%
		12/31/2017	\$ 2,535,109,093	\$ 2,543,727,008	100.3%	2.44%	3.15	2.23%
			\$ 16,381,577	\$ 2,983,204	-0.5%	0.26%	(0.04)	0.03%

<sup>\*</sup>Gross of Galliard, Payden & Rygel, and Prudential investment management fees.



# STATE OF NORTH CAROLINA STABLE VALUE FUND PORTFOLIO HOLDINGS

December 31, 2017

Asset ID	Security Description	Manager	Contract Value (\$)	Market Value (\$)	Market/Book Value Ratio (%)	% of Portfolio	Crediting Rate/ Yield (%)	Maturity*	Effective Duration (yrs)	S&P Rating	Moody's	Wrap Fee (bps)
CASH & EQU		Manager	ναιασ (ψ)	ναιαο (ψ)	Value 1 (44)	1 01110110	11010 (70)	matarrey	Daration (310)	rtating	rtating	. 66 (566)
FUNDAVAIL	Cash Receivable / (Payable)		-1,286,884	-1,286,884	100.0	-0.1	1.14		0.10	AAA	Aaa	
VP45600\$1	WF Government Institutional MM #1751		22,117,000	22,117,000	100.0	0.9	1.14		0.10	AAA	Aaa	
TOTAL CASH	& EQUIVALENTS		20,830,116	20,830,116	100.0	0.8	1.14		0.10	AAA	Aaa	
STABLE VAL												
949907109	Wells Fargo Stable Return Fund G		166,432,107	166,432,107	100.0	6.6	2.14		2.64	AA-	Aa3	
TOTAL STAB	LE VALUE FUNDS		166,432,107	166,432,107	100.0	6.6	2.14		2.64	AA-	Aa3	
SEPARATE A	CCOUNT GICS		, .	, . , .								
Intermediat												
391997NH2	Great-West Life & Annuity Ins. Co.	Great West	511,169,477	507,885,076	99.4	20.2	2.10	N.S.M.	3.91	AA	Aa3	15.0
590994VM8	Metropolitan Life Ins. Co.	Dodge & Cox	326,929,548	330,438,747	101.1	12.9	2.66	N.S.M.	3.70	AA-	Aa3	20.0
Total Intern	nediate Portfolio		838,099,025	838,323,823	100.0	33.1	2.32		3.83	AA	Aa3	
TOTAL SEPA	RATE ACCOUNT GICS		838,099,025	838,323,823	100.0	33.1	2.32		3.83	AA	Aa3	
SECURITY BA	ACKED INVESTMENT CONTRACT	rs										
Short Portfo	olio											
946996EE1	American General Life Ins. Co.	Payden & Rygel	375,898,664	374,353,657	99.6	14.8	1.65	N.S.M.	1.61	A+	A2	20.0
896994GW4	Nationwide Life Ins. Co.	Galliard	427,607,115	426,005,781	99.6	16.9	1.81	N.S.M.	1.86	A+	A1	21.0
<b>Total Short</b>	Portfolio		803,505,779	800,359,439	99.6	31.7	1.74		1.74	A+	<b>A1</b>	
Intermediat	e Portfolio											
744999CV3	Prudential Ins. Co. of America	Jennison Assoc.	349,289,732	354,996,860	101.6	13.8	2.76	N.S.M.	4.16	AA-	A1	17.0
744999CV3	Prudential Ins. Co. of America	Prudential	356,952,334	362,784,663	101.6	14.1	2.76	N.S.M.	4.19	AA-	A1	17.0
Total Intern	nediate Portfolio		706,242,067	717,781,524	101.6	27.9	2.76		4.18	AA-	<b>A</b> 1	
TOTAL SECU	RITY BACKED INVESTMENT CO	NTRACTS	1,509,747,846	1,518,140,962	100.6	59.6	2.21		2.88	A+	<b>A</b> 1	
TOTAL PORT	FOLIO		2,535,109,093	2,543,727,008	100.3	100.0	2.23		3.15	AA-	A1	

# SECTION III

# STATE OF NORTH CAROLINA STABLE VALUE FUNDS

## RELATIONSHIP MILESTONES

2017	<ul> <li>Hosted SRP staff at Galliard offices for due diligence review</li> <li>Negotiated lower contract fees with American General Life</li> </ul>
2016	<ul> <li>Merged the 457 plan's Stable Value Fund into the plan's 401(k) Stable Value Fund</li> </ul>
	<ul> <li>Amended the Galliard IMA to reflect relationship with the group trust. Amendment included Galliard investment management fee reduction</li> </ul>
	<ul> <li>Transitioned Prudential enhanced index strategy collective trust to an active management strategy separate account. No change to benchmark (intermediate aggregate).</li> </ul>
2015	<ul> <li>Added Dodge &amp; Cox as sub-advisor to both the 401(k) and 457 Plan's stable value funds, replacing PIMCO</li> </ul>
	<ul> <li>Facilitated closure of Great West Life open receivable</li> </ul>
	Negotiated lower contract fees with American General Life
2014	Finalized Nationwide wrap contract to replace United of Omaha
	Reduced Great West Life allocation to target (20%)
2013	Secured wrap coverage for Payden & Rygel with American General Life
	<ul> <li>Reduced exposure to PIMCO/Met Life to 13% target</li> </ul>
	<ul> <li>Allocated 15% to Jennison under Prudential wrap</li> </ul>



# STATE OF NORTH CAROLINA STABLE VALUE FUNDS

## RELATIONSHIP MILESTONES CONTINUED

2012	<ul> <li>Changed STIF to Wells Fargo Government Money Market</li> <li>Finalize portfolio strategy recommendations</li> </ul>
	<ul> <li>Changed 401(k) Plan's Prudential benchmark from Broad Market to Intermediate Aggregate</li> <li>Transitioned PIMCO to intermediate duration strategy wrapped by MetLife and increase allocation</li> </ul>
	<ul><li>to 15% of assets</li><li>Funded Galliard short duration strategy with United of Omaha Wrap</li></ul>
	Began termination of State Street securities lending program in the 401(k) Plan
2011	Transitioned 457 Plan's Prudential intermediate duration strategy to Galliard collective trust
	<ul> <li>Liquidation of GWL trading account and funding of the Wells Fargo STIF and Wells Fargo SRF liquidity buffer</li> </ul>
	<ul> <li>Transitioned custody of the 401(k) Payden &amp; Rygel portfolio to Wells Fargo</li> </ul>
	New guidelines established for Payden short duration strategy
	<ul> <li>Transition 401(k) Plan's Prudential investment to intermediate duration collective trust</li> </ul>
	Moved from declared rate to actual portfolio returns
DECEMBER 2010	Galliard assumes oversight, daily valuations, and administration of stable value funds
DECEMBER 2010	Transitioned custody of the 457 Plan Payden & Rygel portfolio to Wells Fargo



## STATE OF NORTH CAROLINA

**EXPENSE DISCLOSURE** 

### TOTAL ANNUAL OPERATING EXPENSES

Total Annual Operating Expenses are deducted directly from the Fund's net asset value and reduce the investment option's rate of return.

Expense	Expense Ratio (as of 12/31/17)	Per \$1000	Est. Annual Revenue
Investment Management Fees paid to Galliard	0.067%	\$0.67	\$1,687,369
Investment Management Fees paid to Non-Affiliated Investment Advisors	0.062%	\$0.62	\$1,576,121
Investment Contract Fees <sup>1</sup>	0.168%	\$1.68	\$4,270,997
Acquired Fund Fees <sup>2</sup>	0.031%	\$0.31	\$775,424
-Investment Contract Fees	0.012%	\$0.12	\$304,089
-Other Acquired Fund Fees and Non-Affiliated Investment Management Fees paid to Non- Affiliated Investment Advisors <sup>3</sup>	0.019%	\$0.19	\$471,335
12b-1 Distribution Fee	None	None	None
Other Expenses	0.027%	\$0.27	\$675,961
Total Annual Fund Operating Expense <sup>4</sup>	0.354%	\$3.54	\$8,985,873

<sup>&</sup>lt;sup>4</sup>Total Annual Fund Operating Expenses are reflected daily in the Fund's net asset value (NAV)



<sup>&</sup>lt;sup>1</sup>These are fees paid to create and maintain the investments used by a stable value fund

<sup>&</sup>lt;sup>2</sup>These are fees borne indirectly by the Fund when it acquires an interest in another fund which pays its own separate fees

<sup>&</sup>lt;sup>3</sup>Includes audit fees for the cost of producing a report by a qualified auditor