







































**SCHEDULE OF DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES**

(continued)

**STATE EMPLOYEES**

Total Deferred Outflows and Inflows between Expected and Actual Experience											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2020	\$134,241	\$0	3.5	\$0	\$0	\$134,241	\$0	\$38,355	\$0	\$95,886	\$0
2019	\$310	\$0	3.5	\$221	\$0	\$0	\$0	\$89	\$0	\$132	\$0
2018	\$0	\$16,241	3.5	\$0	\$6,959	\$0	\$0	\$0	\$4,641	\$0	\$2,318
2017	\$0	\$56,579	3.6	\$0	\$9,433	\$0	\$0	\$0	\$9,433	\$0	\$0
<b>Total</b>				\$221	\$16,392	\$134,241	\$0			\$96,018	\$2,318

Total Deferred Outflows and Inflows for Differences From Assumption Changes											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2020	\$0	\$0	3.5	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2019	\$0	\$0	3.6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2018	\$0	\$0	3.5	\$15,263	\$0	\$0	\$0	\$10,176	\$0	\$5,087	\$0
2017	\$0	\$0	3.6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total</b>				\$15,263	\$0	\$0	\$0			\$5,087	\$0



**SCHEDULE OF DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES**  
**(continued)**  
**STATE EMPLOYEES**

Total Deferred Outflows and Inflows for Differences in Investment Experience											
Year				Beginning Balance				Ending Balance			
	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows	Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)	(e)	(f)	(a) + (c) - (e)	(b) + (d) - (f)
2020	\$96,230	\$0	5	\$0	\$0	\$96,230	\$0	\$19,246	\$0	\$76,984	\$0
2019	\$255,939	\$0	5	\$204,751	\$0	\$0	\$0	\$51,188	\$0	\$153,563	\$0
2018	\$0	\$72,669	5	\$0	\$43,601	\$0	\$0	\$0	\$14,534	\$0	\$29,067
2017	\$0	\$229,606	5	\$0	\$91,843	\$0	\$0	\$0	\$45,921	\$0	\$45,922
2016	\$0	\$95,746	5	0	19,150	\$0	\$0	\$0	\$19,150	\$0	\$0
<b>Total</b>				\$204,751	\$154,594	\$96,230	\$0			\$230,547	\$74,989
<b>Net difference between projected and actual earnings on investments</b>										\$155,558	\$0

**SCHEDULE OF DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES**

(continued)

**STATE POLICE**



<b>Total Deferred Outflows and Inflows between Expected and Actual Experience</b>											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2020	\$8,966	\$0	3.6	\$0	\$0	\$8,966	\$0	\$2,491	\$0	\$6,475	\$0
2019	\$181	\$0	3.6	\$131	\$0	\$0	\$0	\$50	\$0	\$81	\$0
2018	0	\$1,093	3.4	\$0	\$450	\$0	\$0	\$0	\$321	\$0	\$129
2017	0	1,079	3.7	\$0	\$204	\$0	\$0	\$0	\$204	\$0	\$0
2016	7,138	0	4.1	\$174	\$0	\$0	\$0	\$174	\$0	\$0	\$0
<b>Total</b>				<u>\$305</u>	<u>\$654</u>	<u>\$8,966</u>	<u>\$0</u>			<u>\$6,556</u>	<u>\$129</u>

<b>Total Deferred Outflows and Inflows for Differences From Assumption Changes</b>											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2020	\$0	\$0	3.6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2019	\$0	\$0	3.6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2018	\$2,823	\$0	3.4	\$1,163	\$0	\$0	\$0	\$830	\$0	\$333	\$0
2017	\$0	\$0	3.7	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2016	\$24,237	\$0	4.1	590	\$0	\$0	\$0	\$590	\$0	\$0	\$0
<b>Total</b>				<u>\$1,753</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>			<u>\$333</u>	<u>\$0</u>



**SCHEDULE OF DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES**  
**(continued)**  
**STATE POLICE**

Total Deferred Outflows and Inflows for Differences in Investment Experience											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Ending Balance			
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows	Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)	(e)	(f)	(a) + (c) - (e)	(b) + (d) - (f)
2020	\$6,674	\$0	5	\$0	\$0	\$6,674	\$0	\$1,335	\$0	\$5,339	\$0
2019	\$17,622	\$0	5	\$14,098	\$0	\$0	\$0	\$3,524	\$0	\$10,574	\$0
2018	\$0	\$5,012	5	\$0	\$3,008	\$0	\$0	\$0	\$1,002	\$0	\$2,006
2017	\$0	\$15,745	5	\$0	\$6,298	\$0	\$0	\$0	\$3,149	\$0	\$3,149
2016	\$0	\$6,544	5	\$0	1,308	\$0	\$0	\$0	\$1,308	\$0	\$0
<b>Total</b>				\$14,098	\$10,614	\$6,674	\$0			\$15,913	\$5,155
<b>Net difference between projected and actual earnings on investments</b>										\$10,758	\$0

**SCHEDULE OF DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES**

(continued)

**LOCAL EMPLOYEES**



<b>Total Deferred Outflows and Inflows between Expected and Actual Experience</b>											
<b>Year</b>	<b>Initial Balance of Losses / Deferred Outflow</b>	<b>Initial Balance of Gains / Deferred Inflow</b>	<b>Amortization Period</b>	<b>Beginning Balance</b>				<b>Amounts Recognized in Pension Expense / Deferred Outflow</b>	<b>Amounts Recognized in Pension Expense / Deferred Inflow</b>	<b>Ending Balance</b>	
				<b>Deferred Outflows</b>	<b>Deferred Inflows</b>	<b>Losses / Deferred Outflows</b>	<b>Gains / Deferred Inflows</b>			<b>Deferred Outflows</b>	<b>Deferred Inflows</b>
				<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>			<b>(e)</b>	<b>(f)</b>
2020	\$151,854	\$51,152	Varies	\$0	\$0	\$151,854	\$51,152	\$27,408	\$12,851	\$124,446	\$38,301
2019	\$85,590	\$61,669	Varies	\$70,856	\$49,754	\$0	\$20,407	\$13,594	\$16,596	\$57,262	\$53,565
2018	\$53,203	\$115,142	Varies	\$34,179	\$76,193	\$1,637	\$0	\$9,640	\$18,587	\$26,176	\$57,606
2017	\$88,079	\$94,532	Varies	46,080	\$44,669	\$3,975	\$0	\$15,601	\$14,398	\$34,454	\$30,271
2016	\$69,623	\$77,377	Varies	27,000	21,491	\$627	\$0	\$10,413	\$8,919	\$17,214	\$12,572
2015	\$78,729	\$52,479	Varies	16,525	9,015	\$0	\$0	\$10,036	\$5,106	\$6,489	\$3,909
<b>Total</b>				<b>\$194,640</b>	<b>\$201,122</b>	<b>\$158,093</b>	<b>\$71,559</b>			<b>\$266,041</b>	<b>\$196,224</b>

<b>Total Deferred Outflows and Inflows for Differences From Assumption Changes</b>											
<b>Year</b>	<b>Initial Balance of Losses / Deferred Outflow</b>	<b>Initial Balance of Gains / Deferred Inflow</b>	<b>Amortization Period</b>	<b>Beginning Balance</b>				<b>Amounts Recognized in Pension Expense / Deferred Outflow</b>	<b>Amounts Recognized in Pension Expense / Deferred Inflow</b>	<b>Ending Balance</b>	
				<b>Deferred Outflows</b>	<b>Deferred Inflows</b>	<b>Losses / Deferred Outflows</b>	<b>Gains / Deferred Inflows</b>			<b>Deferred Outflows</b>	<b>Deferred Inflows</b>
				<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>			<b>(e)</b>	<b>(f)</b>
2020	\$0	\$0	Varies	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2019	\$0	\$0	Varies	\$0	\$0	\$0	\$33,673	\$0	\$10,361	\$0	\$23,312
2018	\$49,188	\$0	Varies	\$32,747	\$0	\$14,342	\$0	\$13,611	\$0	\$33,478	\$0
2017	\$0	\$0	Varies	\$0	\$0	\$448	\$0	\$295	\$0	\$153	\$0
2016	\$350,904	\$0	Varies	\$120,313	\$0	\$0	\$1	\$49,135	\$1	\$71,178	\$0
<b>Total</b>				<b>\$153,060</b>	<b>\$0</b>	<b>\$14,790</b>	<b>\$33,674</b>			<b>\$104,809</b>	<b>\$23,312</b>



**SCHEDULE OF DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES**  
**(continued)**  
**LOCAL EMPLOYEES**

Total Deferred Outflows and Inflows for Differences in Investment Experience											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2020	\$148,638	\$0	5	\$0	\$0	\$148,638	\$0	\$29,728	\$0	\$118,910	\$0
2019	\$367,152	\$0	5	\$293,721	\$0	\$0	\$14,784	\$73,431	\$3,479	\$220,290	\$11,305
2018	\$0	\$100,918	5	\$0	\$60,550	\$25,986	\$0	\$7,996	\$20,184	\$17,990	\$40,366
2017	\$0	\$308,114	5	\$0	\$123,245	\$0	\$8,727	\$0	\$65,502	\$0	\$66,470
2016	\$0	\$123,532	5	\$0	\$24,707	\$566	\$0	\$453	\$24,707	\$113	\$0
2015	\$389,335	\$0	5	\$0	\$0	\$1,421	\$0	\$1,421	\$0	\$0	\$0
<b>Total</b>				\$293,721	\$208,502	\$176,611	\$23,511			\$357,303	\$118,141
<b>Net difference between projected and actual earnings on investments</b>										\$239,162	

**SCHEDULE OF DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES**

**(continued)**

**TOTAL**



<b>Total Deferred Outflows and Inflows between Expected and Actual Experience</b>											
<b>Year</b>	<b>Initial Balance of Losses / Deferred Outflow</b>	<b>Initial Balance of Gains / Deferred Inflow</b>	<b>Amortization Period</b>	<b>Beginning Balance</b>				<b>Amounts Recognized in Pension Expense / Deferred Outflow</b>	<b>Amounts Recognized in Pension Expense / Deferred Inflow</b>	<b>Ending Balance</b>	
				<b>Deferred Outflows</b>	<b>Deferred Inflows</b>	<b>Losses / Deferred Outflows</b>	<b>Gains / Deferred Inflows</b>			<b>Deferred Outflows</b>	<b>Deferred Inflows</b>
				<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>			<b>(a) + (c) - (e)</b>	<b>(b) + (d) - (f)</b>
2020	\$295,061	\$51,152	Varies	\$0	\$0	\$295,061	\$51,152	\$68,254	\$12,851	\$226,807	\$38,301
2019	\$86,081	\$61,669	Varies	\$71,208	\$49,754	\$0	\$20,407	\$13,733	\$16,596	\$57,475	\$53,565
2018	\$53,203	\$132,476	Varies	\$34,179	\$83,602	\$1,637	\$0	\$9,640	\$23,549	\$26,176	\$60,053
2017	\$88,079	\$152,190	Varies	\$46,080	\$54,306	\$3,975	\$0	\$15,601	\$24,035	\$34,454	\$30,271
2016	\$76,761	\$77,377	Varies	\$27,174	\$21,491	\$627	\$0	\$10,587	\$8,919	\$17,214	\$12,572
2015	\$78,729	\$52,479	Varies	\$16,525	\$9,015	\$0	\$0	\$10,036	\$5,106	\$6,489	\$3,909
<b>Total</b>				<u>\$195,166</u>	<u>\$218,168</u>	<u>\$301,300</u>	<u>\$71,559</u>			<u>\$368,615</u>	<u>\$198,671</u>

<b>Total Deferred Outflows and Inflows for Differences From Assumption Changes</b>											
<b>Year</b>	<b>Initial Balance of Losses / Deferred Outflow</b>	<b>Initial Balance of Gains / Deferred Inflow</b>	<b>Amortization Period</b>	<b>Beginning Balance</b>				<b>Amounts Recognized in Pension Expense / Deferred Outflow</b>	<b>Amounts Recognized in Pension Expense / Deferred Inflow</b>	<b>Ending Balance</b>	
				<b>Deferred Outflows</b>	<b>Deferred Inflows</b>	<b>Losses / Deferred Outflows</b>	<b>Gains / Deferred Inflows</b>			<b>Deferred Outflows</b>	<b>Deferred Inflows</b>
				<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>			<b>(a) + (c) - (e)</b>	<b>(b) + (d) - (f)</b>
2020	\$0	\$0	Varies	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2019	\$0	\$0	Varies	\$0	\$0	\$0	\$33,673	\$0	\$10,361	\$0	\$23,312
2018	\$52,011	\$0	Varies	\$49,173	\$0	\$14,342	\$0	\$24,617	\$0	\$38,898	\$0
2017	\$0	\$0	Varies	\$0	\$0	\$448	\$0	\$295	\$0	\$153	\$0
2016	\$375,141	\$0	Varies	\$120,903	\$0	\$0	\$1	\$49,725	\$1	\$71,178	\$0
<b>Total</b>				<u>\$170,076</u>	<u>\$0</u>	<u>\$14,790</u>	<u>\$33,674</u>			<u>\$110,229</u>	<u>\$23,312</u>





**SCHEDULE OF DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES**  
**(continued)**  
**TOTAL**

Total Deferred Outflows and Inflows for Differences in Investment Experience												
Year	<u>Beginning Balance</u>										<u>Ending Balance</u>	
	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Deferred Outflows							Deferred Inflows	Losses / Deferred Outflows
	<u>(a)</u>	<u>(b)</u>	<u>(c)</u>	<u>(d)</u>	<u>(e)</u>	<u>(f)</u>	<u>(a) + (c) - (e)</u>	<u>(b) + (d) - (f)</u>				
2020	\$251,542	\$0	5	\$0	\$0	\$251,542	\$0	\$50,309	\$0	\$201,233	\$0	
2019	\$640,713	\$0	5	\$512,570	\$0	\$0	\$14,784	\$128,143	\$3,479	\$384,427	\$11,305	
2018	\$0	\$178,599	5	\$0	\$107,159	\$25,986	\$0	\$7,996	\$35,720	\$17,990	\$71,439	
2017	\$0	\$553,465	5	\$0	\$221,386	\$0	\$8,727	\$0	\$114,572	\$0	\$115,541	
2016	\$0	\$225,823	5	\$0	\$45,165	\$566	\$0	\$453	\$45,165	\$113	\$0	
<b>Total</b>				<u>\$512,570</u>	<u>\$373,710</u>	<u>\$278,094</u>	<u>\$23,511</u>			<u>\$603,763</u>	<u>\$198,285</u>	
<b>Net difference between projected and actual earnings on investments</b>										\$405,478	\$0	



**Paragraph 45 (i):** Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in Pension Expense as follows:

**Deferred Amounts to be Recognized in Fiscal Years Following the Reporting Date**

Year	State Employees	State Police	Local Employees	Total
2022	\$51,190	\$3,452	\$74,594	\$129,236
2023	94,299	6,377	116,136	216,812
2024	89,611	6,354	128,084	224,049
2025	19,246	1,335	53,135	73,716
2026	0	0	13,931	13,931
Thereafter	0	0	4,596	4,596



## **SECTION IV – PENSION EXPENSE**

As noted earlier, the Pension Expense (PE) consists of a number of different items. GASB 68 refers to the first as Service Cost which is the Normal Cost using the Entry Age Normal (EAN) actuarial funding method. The second item is interest on the beginning of year TPL and the cash flows during the year at the 7.70% rate of return in effect as of the previous measurement date.

The next three items refer to any changes that occurred in the TPL due to:

- benefit changes,
- actual versus expected experience or
- changes in actuarial assumptions.

Benefit changes, which are reflected immediately in PE, can be positive, if there is a benefit enhancement for existing Plan members, or negative if there is a benefit reduction. For the year ended September 30, 2020 the provisions of Act 2019-132 are recognized for the Local Employers.

The next item to be recognized is the portion of current year changes in TPL due to actual versus expected experience for the year. The portion to recognize in the current year is determined by spreading the total change over the average expected remaining service life of the entire membership of the employer. The remaining service life of active members is the average number of years the active members are expected to remain active. For the year ended September 30, 2020 the average remaining service life is 9.5 years for state employees and 7.2 years for state police. The remaining service life of the inactive members is zero. Therefore, the figure to use for the amortization is the weighted average of these two amounts, or 3.5 years for state employees and 3.6 years for state police. The amortization period varies for each local employer.

The last item under changes in TPL are changes in actuarial assumptions. Recognition of the change is spread over the remaining service life of the entire membership of the employer. For the year ended September 30, 2020, there were no assumption changes to be recognized.

Member contributions for the year and projected earnings on the FNP, again at the rate used to calculate the liabilities, are subtracted from the amount determined thus far. One-fifth of current period differences between actual and projected earnings on the FNP are recognized in the pension expense.

The current year portions of previously determined experience, assumption, and earnings amounts, recognized as deferred inflows and outflows (see Section IV) are included next. Deferred inflows are subtracted from the PE while deferred outflows are added to the PE. Transfers among employers are also included in PE.



The calculation of the Pension Expense is shown in the following table.

**Pension Expense**  
**Determined as of the Measurement Date**  
**(\$ thousands)**

	State Employees	State Police	Local Employees	Total
Service Cost	\$115,018	\$8,800	\$206,177	\$329,995
Interest	582,317	46,806	778,755	1,407,878
Current-period benefit changes	0	0	71,320	71,320
Expensed portion of current-period difference between expected and actual experience in the total pension liability	38,355	2,491	14,557	55,403
Expensed portion of current-period changes of assumptions	0	0	0	0
Member contributions	(110,197)	(4,638)	(156,112)	(270,947)
Other	0	0	0	0
Projected earnings on plan investments	(373,229)	(25,885)	(576,454)	(975,568)
Expensed portion of current-period differences between actual and projected earnings on plan investments	19,246	1,335	29,728	50,309
Administrative expense	16,539	0	0	16,539
Transfers among employers	0	0	0	0
Recognition of beginning deferred outflows of resources as pension expense	(18,152)	(291)	91,753	73,310
Recognition of beginning deferred inflows of resources as pension expense	(14,074)	(525)	(73,968)	(88,567)
Pension Expense	<u>\$255,823</u>	<u>\$28,093</u>	<u>\$385,756</u>	<u>\$669,672</u>



**SCHEDULE A**  
**REQUIRED SUPPLEMENTARY INFORMATION**  
**SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY**  
**Last 10 Fiscal Years Ending September 30**  
**STATE EMPLOYEES**  
**(\$ in thousands)**

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
<b>Total pension liability</b>										
Service Cost	\$ 115,018	\$ 110,482	\$ 107,929	\$ 107,377	\$ 113,497	\$ 152,160	\$ 107,776			
Interest	582,317	573,993	567,816	563,620	557,699	549,795	541,492			
Benefit changes	-	-	-	-	-	-	-			
Difference between expected and actual experience	134,241	310	(16,241)	(56,579)	3,957	(60,921)	-			
Changes of assumptions	-	-	35,615	-	183,527	-	-			
Benefit payments, including refunds of employee contributions	(586,640)	(569,659)	(569,781)	(551,721)	(563,913)	(559,171)	(531,786)			
Transfers among employers	39	1,470	2,411	1,290	(409)	19,304	-			
<b>Net change in total pension liability</b>	<b>244,975</b>	<b>116,596</b>	<b>127,749</b>	<b>63,987</b>	<b>294,358</b>	<b>101,167</b>	<b>117,482</b>			
<b>Total pension liability - beginning</b>	<b>\$ 7,855,880</b>	<b>\$ 7,739,284</b>	<b>\$ 7,611,535</b>	<b>\$ 7,547,548</b>	<b>\$ 7,253,190</b>	<b>\$ 7,152,023</b>	<b>\$ 7,034,541</b>			
<b>Total pension liability - ending (a)</b>	<b>\$ 8,100,855</b>	<b>\$ 7,855,880</b>	<b>\$ 7,739,284</b>	<b>\$ 7,611,535</b>	<b>\$ 7,547,548</b>	<b>\$ 7,253,190</b>	<b>\$ 7,152,023</b>			
<b>Components of Plan Fiduciary Net Position reserved to fund Total Pension Liability</b>										
Contributions - employer	\$ 228,964	\$ 208,020	\$ 186,715	\$ 184,362	\$ 192,420	\$ 177,599	\$ 146,752			
Contributions - member	110,197	104,031	97,527	95,979	100,907	97,144	96,585			
Other	-	-	(7,481)	-	-	68,898	-			
Net investment income	276,998	128,063	446,946	581,603	446,180	54,772	523,129			
Benefit payments, including refunds of employee contributions	(586,640)	(569,659)	(570,131)	(551,721)	(563,913)	(559,171)	(531,786)			
Transfers among employers	39	1,470	2,411	478	(409)	6,435	410			
Administrative Expenses	(16,539)	(15,829)	(13,763)	(14,502)	(13,023)	(13,182)	-			
<b>Net change in plan fiduciary net position</b>	<b>13,019</b>	<b>(143,904)</b>	<b>142,224</b>	<b>296,199</b>	<b>162,162</b>	<b>(167,505)</b>	<b>235,090</b>			
<b>Plan fiduciary net position - beginning</b>	<b>\$ 4,979,118</b>	<b>\$ 5,123,022</b>	<b>\$ 4,980,798</b>	<b>\$ 4,684,599</b>	<b>\$ 4,522,437</b>	<b>\$ 4,689,942</b>	<b>\$ 4,454,852</b>			
<b>Plan fiduciary net position - ending (b)</b>	<b>\$ 4,992,137</b>	<b>\$ 4,979,118</b>	<b>\$ 5,123,022</b>	<b>\$ 4,980,798</b>	<b>\$ 4,684,599</b>	<b>\$ 4,522,437</b>	<b>\$ 4,689,942</b>			
<b>Net pension liability (asset) - ending (a) - (b)</b>	<b>\$ 3,108,718</b>	<b>\$ 2,876,762</b>	<b>\$ 2,616,262</b>	<b>\$ 2,630,737</b>	<b>\$ 2,862,949</b>	<b>\$ 2,730,752</b>	<b>\$ 2,462,081</b>			
<b>Plan fiduciary net position as a percentage of the total pension liability</b>	<b>61.62%</b>	<b>63.38%</b>	<b>66.20%</b>	<b>65.44%</b>	<b>62.07%</b>	<b>62.35%</b>	<b>65.58%</b>			
<b>Covered payroll*</b>	<b>\$X,XXX</b>	<b>\$X,XXX</b>	<b>\$X,XXX</b>	<b>\$X,XXX</b>	<b>\$X,XXX</b>	<b>\$X,XXX</b>	<b>\$X,XXX</b>			
<b>Net pension liability (asset) as a percentage of covered payroll</b>	<b>X.XX%</b>	<b>X.XX%</b>	<b>X.XX%</b>	<b>X.XX%</b>	<b>X.XX%</b>	<b>X.XX%</b>	<b>X.XX%</b>			

\*Employer's covered payroll during the measurement period is the total covered payroll. For FY2021 the measurement period is October 1, 2020 – September 30, 2021.

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, governments should present information for those years for which information is available.



**SCHEDULE A**  
**REQUIRED SUPPLEMENTARY INFORMATION**  
**SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY**  
**Last 10 Fiscal Years Ending September 30**  
**STATE POLICE**  
**(\$ in thousands)**

	2019	2019	2018	2017	2016	2015	2014	2013	2012	2011
<b>Total pension liability</b>										
Service Cost	\$ 8,800	\$ 8,758	\$ 8,829	\$ 9,016	\$ 8,484	\$ 8,394	\$ 8,654			
Interest	46,806	46,042	45,434	44,687	43,025	42,677	41,950			
Benefit changes	-	-	-	-	-	-	-			
Difference between expected and actual experience	8,966	181	(1,093)	(1,079)	7,138	(2,544)	-			
Changes of assumptions	-	-	2,823	-	24,237	-	-			
Benefit payments, including refunds of employee contributions	(46,258)	(44,857)	(44,004)	(42,454)	(44,770)	(43,588)	(39,451)			
Transfers among employers	3,710	496	127	253	(470)	-	-			
<b>Net change in total pension liability</b>	<b>22,024</b>	<b>10,620</b>	<b>12,116</b>	<b>10,423</b>	<b>37,644</b>	<b>4,939</b>	<b>11,153</b>			
<b>Total pension liability - beginning</b>	<b>\$ 630,995</b>	<b>\$ 620,375</b>	<b>\$ 608,259</b>	<b>\$ 597,836</b>	<b>\$ 560,192</b>	<b>\$ 555,253</b>	<b>\$ 544,100</b>			
<b>Total pension liability - ending (a)</b>	<b>\$ 653,019</b>	<b>\$ 630,995</b>	<b>\$ 620,375</b>	<b>\$ 608,259</b>	<b>\$ 597,836</b>	<b>\$ 560,192</b>	<b>\$ 555,253</b>			
<b>Components of Plan Fiduciary Net Position reserved to fund Total Pension Liability</b>										
Contributions - employer	\$ 24,917	\$ 20,915	\$ 17,885	\$ 23,031	\$ 18,491	\$ 16,463	\$ 15,347			
Contributions - member	4,638	4,406	4,141	4,322	4,407	4,374	4,454			
Other	-	-	-	-	-	-	-			
Net investment income	19,211	8,817	30,819	39,883	30,508	3,776	36,410			
Benefit payments, including refunds of employee contributions	(46,258)	(44,857)	(44,004)	(42,454)	(44,770)	(43,588)	(39,451)			
Transfers among employers	3,710	496	127	253	(470)	(138)	(384)			
Administrative Expenses	-	-	-	-	-	-	-			
<b>Net change in plan fiduciary net position</b>	<b>6,218</b>	<b>(10,223)</b>	<b>8,968</b>	<b>25,035</b>	<b>8,166</b>	<b>(19,113)</b>	<b>16,376</b>			
<b>Plan fiduciary net position - beginning</b>	<b>\$ 342,665</b>	<b>\$ 352,888</b>	<b>\$ 343,920</b>	<b>\$ 318,885</b>	<b>\$ 310,719</b>	<b>\$ 329,832</b>	<b>\$ 313,456</b>			
<b>Plan fiduciary net position - ending (b)</b>	<b>\$ 348,883</b>	<b>\$ 342,665</b>	<b>\$ 352,888</b>	<b>\$ 343,920</b>	<b>\$ 318,885</b>	<b>\$ 310,719</b>	<b>\$ 329,832</b>			
<b>Net pension liability (asset) - ending (a) - (b)</b>	<b>\$ 304,136</b>	<b>\$ 288,330</b>	<b>\$ 267,487</b>	<b>\$ 264,339</b>	<b>\$ 278,951</b>	<b>\$ 249,473</b>	<b>\$ 225,421</b>			
<b>Plan fiduciary net position as a percentage of the total pension liability</b>	<b>53.43%</b>	<b>54.31%</b>	<b>56.88%</b>	<b>56.54%</b>	<b>53.34%</b>	<b>55.47%</b>	<b>59.40%</b>			
<b>Covered payroll*</b>	<b>\$X,XXX</b>	<b>\$X,XXX</b>	<b>\$X,XXX</b>	<b>\$X,XXX</b>	<b>\$X,XXX</b>	<b>\$X,XXX</b>	<b>\$X,XXX</b>			
<b>Net pension liability (asset) as a percentage of covered payroll</b>	<b>X.XX%</b>	<b>X.XX%</b>	<b>X.XX%</b>	<b>X.XX%</b>	<b>X.XX%</b>	<b>X.XX%</b>	<b>X.XX%</b>			

\*Employer's covered payroll during the measurement period is the total covered payroll. For FY2021 the measurement period is October 1, 2020 – September 30, 2021.

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, governments should present information for those years for which information is available.



**SCHEDULE OF EMPLOYER CONTRIBUTIONS**  
**Last 10 Fiscal Years Ending September 30**  
**STATE EMPLOYEES**

	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Actuarially determined contribution*	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX			
Contributions in relation to the actuarially determined contribution*	X,XXX	X,XXX	X,XXX	X,XXX	X,XXX	X,XXX	X,XXX			
Contribution deficiency (excess)	\$0	\$0	\$0	\$0	\$0	\$0	\$0			
Covered payroll**	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX			
Contributions as a percentage of covered payroll	X.XX%	X.XX%	X.XX%	X.XX%	X.XX%	X.XX%	X.XX%			

\*The amount of employer contributions related to normal and accrued liability components of employer rate net of any refunds or error service payments. The Schedule of Employer Contributions is based on the 12-month period of the underlying financial statement.

\*\*Employer's covered payroll for FY2021 is the total covered payroll for the 12-month period of the underlying financial statement.

**Notes to Schedule**

Actuarially determined contribution rates are calculated as of September 30, three years prior to the end of the fiscal year in which contributions are reported. Contributions for fiscal year 2021 were based on the September 30, 2018 actuarial valuation.

Methods and assumptions used to determine contribution rates for the period October 1, 2020 to September 30, 2021\*:

Actuarial cost method	Entry Age
Amortization method	Level percent closed
Remaining amortization period	28.4 years
Asset valuation method	Five-year smoothed market
Inflation	2.75%
Salary increases	3.25 – 5.00%, including inflation
Investment rate of return	7.70%, net of pension plan investment expense, including inflation

\*If the employer's financial reporting period end is other than September 30, 2021, additional assumptions should be reported for the basis of determining the portion of the contribution prior to or subsequent to this period.

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, governments should present information for those years for which information is available.



**SCHEDULE OF EMPLOYER CONTRIBUTIONS**  
**Last 10 Fiscal Years Ending September 30**  
**STATE POLICE**

	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Actuarially determined contribution*	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX			
Contributions in relation to the actuarially determined contribution*	X,XXX	X,XXX	X,XXX	X,XXX	X,XXX	X,XXX	X,XXX			
Contribution deficiency (excess)	\$0	\$0	\$0	\$0	\$0	\$0	\$0			
Covered payroll**	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX			
Contributions as a percentage of covered payroll	X.XX%	X.XX%	X.XX%	X.XX%	X.XX%	X.XX%	X.XX%			

\*The amount of employer contributions related to normal and accrued liability components of employer rate net of any refunds or error service payments. The Schedule of Employer Contributions is based on the 12-month period of the underlying financial statement.

\*\*Employer's covered payroll for FY2021 is the total covered payroll for the 12-month period of the underlying financial statement.

**Notes to Schedule**

Actuarially determined contribution rates are calculated as of September 30, three years prior to the end of the fiscal year in which contributions are reported. Contributions for fiscal year 2021 were based on the September 30, 2018 actuarial valuation.

Methods and assumptions used to determine contribution rates for the period October 1, 2020 to September 30, 2021\*:

Actuarial cost method	Entry Age
Amortization method	Level percent closed
Remaining amortization period	28.3 years
Asset valuation method	Five-year smoothed market
Inflation	2.75%
Salary increases	4.50%, including inflation
Investment rate of return	7.70%, net of pension plan investment expense, including inflation

\*If the employer's financial reporting period end is other than September 30, 2021, additional assumptions should be reported for the basis of determining the portion of the contribution prior to or subsequent to this period.

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, governments should present information for those years for which information is available.





**SCHEDULE B**  
**SUMMARY OF BENEFIT PROVISIONS EVALUATED**

The Employees' Retirement System of Alabama was established on October 1, 1945. The valuation took into account amendments to the System effective through the valuation date. The following summary describes the main benefit and contribution provisions of the System as interpreted for the valuation.

1 – DEFINITIONS

Average Final Compensation – the average compensation of a member for:

- Tier 1 - the 3 highest years in the last 10 years of creditable service
- Tier 2 - the 5 highest years in the last 10 years of creditable service

Membership Service – all service rendered while a member of the Retirement System and for which contributions are made.

Creditable Service – the sum of membership service, prior service, and any other previous service established as creditable in accordance with the provisions of the retirement law.

Annuity – payments for life derived from accumulated contributions of a member.

Pension – payments for life derived from the accumulated contributions of an employer.

Retirement Allowance – the sum of the annuity and pension payments.

2 - BENEFITS

MEMBERS CLASSIFIED OTHER THAN STATE POLICEMEN

Service Retirement Allowance

Condition for Allowance

- |         |  |
|---------|--|
| Tier I  | A retirement allowance is payable upon the request of any member who has completed 25 years of creditable service, (except for employees of local employers who did not elect 25-year retirement), or who has attained age 60 and completed at least 10 years of creditable service. |
| Tier II | A retirement allowance is payable upon the request of any member who has attained age 62 and completed at least 10 years of creditable service (age 56 with 10 years of creditable service for a full-time certified firefighter, police officer or correctional officer).           |



#### Amount of Allowance

Tier I  
Upon service retirement a member receives a retirement allowance equal to 2.0125% of the member's average final compensation multiplied by the number of years of his creditable service. At retirement, a member receives one additional year of creditable service in determining the retirement allowance for each five years of service as a full-time certified firefighter, police officer or correctional officer.

Tier II  
Upon service retirement a member receives a retirement allowance equal to 1.65% of the member's average final compensation multiplied by the number of years of creditable service. The benefit is capped at 80% of the member's average final compensation.

#### Disability Retirement Allowance

Condition for Allowance  
A disability retirement allowance may be granted to a member who has 10 or more years of creditable service and becomes permanently incapacitated for duty before reaching eligibility for service retirement.

#### Amount of Allowance

Tier I  
Upon retirement for disability, a member receives a retirement allowance equal to 2.0125% of the member's average final compensation multiplied by the number of years of his creditable service. At retirement, a member receives one additional year of creditable service in determining the retirement allowance for each five years of service as a full-time certified firefighter, police officer or correctional officer.

Tier II  
Upon disability retirement a member receives a retirement allowance equal to 1.65% of the member's average final compensation multiplied by the number of years of creditable service. The benefit is capped at 80% of the member's average final compensation.

#### Benefits Payable on Separation from Service

Any member who withdraws from service is entitled to receive a return of member contributions with allowable interest. A member who has completed 10 years of creditable service may, after separation from service, continue in the



membership of the System and file for service retirement after reaching age 60 (age 62 for Tier II members).

#### Benefits Payable upon Death in Active Service

In the event of the death of a member eligible for service retirement, the designated beneficiary may elect: (1) to exercise option 3 as defined below under “Special Privileges at Retirement – All Employees” or (2) to receive a return of member contributions and total interest earned plus a death benefit payable from the pre-retirement death benefit fund equal to the salary on which the member made retirement contributions for the previous fiscal year (October 1 – September 30).\*

In the event of the death of a member with more than one year of service who is not eligible for retirement, the designated beneficiary shall receive a return of member contributions and total interest earned. Also, the designated beneficiary shall receive an additional death benefit payable from the pre-retirement death benefit fund equal to the salary on which their retirement contributions were made for the previous fiscal year (October 1 – September 30).\*

In the event of a job-related death of a member at any age with less than 1 year of service, the designated beneficiary shall receive the return of member contributions and total earned interest plus a death benefit payable from the pre-retirement death benefit fund equal to the annual earnable compensation of the member at the time death occurs.\*

In the event of a non job-related death of a member with less than 1 year of service, the beneficiary shall receive the return of member contributions and total interest earned plus a matching death benefit which is limited to a maximum of \$5,000.

\* However, if the death occurred more than 180 calendar days after the member’s last day in pay status, or if the deceased had applied for a refund of contributions or terminated employment, the lump sum will be the same as if the member had less than one year of service and the death was not job-related.

#### Deferred Retirement Option Plan (DROP)

A member may elect to participate in the Deferred Retirement Option Plan (DROP) upon completion of at least 25 years of service (at least 30 years for employers that did not elect 25 year retirement) of creditable service (excluding sick leave) and attainment of at least 55 years of age. Under the DROP, the member may defer receipt of a retirement allowance and continue employment for a period not to exceed five years, nor to be less than three years. At the end of this period, the



member may withdraw from active service and receive the retirement benefit based on his or her years of service credit at the time of enrollment in the DROP, and also receive a payment for the deferred retirement benefits, employee contributions while participating in the DROP, and interest earned on DROP deposits.

As a result of Act 2011-27 no new participants were allowed to enter DROP with an effective participation date after June 1, 2011.

## Member Contributions

### Tier I

Prior to October 1, 2011, regular members contributed 5.0% of salary. Full-time certified police officers, firefighters and correctional officers contributed 6.0% of salary. DROP participants continue to contribute during the DROP period, but receive a refund of these contributions and regular interest upon retirement.

Beginning October 1, 2011, the contribution rates were increased to 7.25% for regular members and 8.25% for full-time certified police officers, firefighters and correctional officers, for all State employees and for local employees whose employers elect to do so.

Beginning October 1, 2012, the contribution rates were increased to 7.50% for regular members and 8.50% for full-time certified police officers, firefighters and correctional officers, for all State employees and for local employees whose employers elect to do so.

### Tier II

Regular members contribute 6% of salary and full-time certified firefighters, police officers and correctional officers contribute 7% of salary.

### Both

If positive investment performance results in a decrease in the total contribution rate paid by employers and employees participating in the System, the Retirement System of Alabama shall first reduce the employee contribution rate.

“Regular Interest” is 4% which is the rate adopted by the Board and applied to the balance in each member’s account every year; however, if a member receives a refund of contributions, the interest rate applied to the refund is lower than the 4% regular rate (Based on Section 36-27-16.3(c)(1)).



## MEMBERS CLASSIFIED AS STATE POLICEMEN

### Service Retirement Allowance

#### Condition for Allowance

##### Tier I

Members hired prior to January 1, 2015: A retirement allowance is payable upon the request of any member who has completed 25 years of creditable service or who has attained age 52 and completed at least 10 years of creditable service.

Members hired after January 1, 2015: A retirement allowance is payable upon the request of any member who has completed 25 years of creditable service or who has attained age 60 and completed at least 10 years of creditable service.

##### Tier II

A retirement allowance is payable upon the request of any member who has attained age 56 and completed at least 10 years of creditable service.

#### Amount of Allowance

##### Tier I

Members hired prior to January 1, 2015: Upon service retirement a member receives a retirement allowance equal to 2.875% of the member's average final compensation multiplied by the number of years of his creditable service.

A member who has attained 20 or more years of creditable service and retires prior to age 60 is eligible to receive a "bonus service credit" up to 4 years as follows:

- Age 56 or older – bonus service of 4 years reduced by 1 month for each month over the age of 56.
- Age 52 to 56 – bonus service of 4 years.
- Age 52 or less (disability retirement only) – bonus service of 4 years.
- Age 52 or less with 25 or more years of service – bonus service of 4 years.

Members hired after January 1, 2015: Upon service retirement a member receives a retirement allowance equal to 2.0125% of the member's average final compensation multiplied by the number of years of his creditable service. At retirement, a member receives one additional year of creditable service in determining the retirement allowance for each five years of service as an officer.



Tier II  
Members hired prior to January 1, 2015: Upon service retirement a member receives a retirement allowance equal to 2.375% of the member's average final compensation multiplied by the number of years of his creditable service. The benefit is capped at 80% of the member's average final compensation.

Members hired after January 1, 2015: Upon service retirement a member receives a retirement allowance equal to 1.65% of the member's average final compensation multiplied by the number of years of his creditable service. The benefit is capped at 80% of the member's average final compensation.

## Disability Retirement Allowance

### Condition for Allowance

A disability retirement allowance may be granted to a member who has 10 or more years of creditable service or who becomes disabled as a result of his employment in line of duty without regard to his years of creditable service, and who becomes permanently incapacitated, mentally or physically, for the further performance of duty before reaching the minimum age for service retirement.

### Amount of Allowance

Tier I  
Members hired prior to January 1, 2015: Upon retirement for disability, a member receives a retirement allowance equal to 2.875% of the member's average final compensation multiplied by the number of years of his creditable service.

Members hired after January 1, 2015: Upon retirement for disability, a member receives a retirement allowance equal to 2.0125% of the member's average final compensation multiplied by the number of years of his creditable service. At retirement, a member receives one additional year of creditable service in determining the retirement allowance for each five years of service as a full-time officer.

Tier II  
Members hired prior to January 1, 2015: Upon retirement for disability, a member receives a retirement allowance equal to 2.375% of the member's average final compensation multiplied by the number of years of his creditable service. The benefit is capped at 80% of the member's average final compensation.

Members hired after January 1, 2015: Upon retirement for disability, a member receives a retirement allowance equal to 1.65% of the member's average final compensation



multiplied by the number of years of his creditable service. The benefit is capped at 80% of the member's average final compensation.

Benefits Payable on  
Separation from Service

Any member who withdraws from service is entitled to receive a return of member contributions with allowable interest. A member who has completed 10 years of creditable service may, after separation from service, continue in the membership of the System and file for service retirement after reaching age 52 (age 56 for Tier II members).

Benefits Payable upon  
Death in Active Service

In the event of the death of a member who is eligible for service retirement, the designated beneficiary may elect: (1) to exercise option 3 as defined below under "Special Privileges at Retirement – All Employees" or (2) to receive a return of member contributions and total interest earned plus a death benefit payable from the pre-retirement death benefit fund equal to the salary on which the member made retirement contributions for the previous fiscal year (October 1 – September 30).\*

In the event of the death of a member with more than one year of service who is not eligible for retirement, the designated beneficiary shall receive a return of member contributions and total interest earned. Also, the designated beneficiary shall receive an additional death benefit payable from the pre-retirement death benefit fund equal to the salary on which their retirement contributions were made for the previous fiscal year (October 1 – September 30).\*

In the event of a job-related death of a member at any age with less than 1 year of service, the designated beneficiary shall receive the return of member contributions and total earned interest plus a death benefit payable from the pre-retirement death benefit fund equal to the annual earnable compensation of the member at the time death occurs.\*

In the event of a non job-related death of a member with less than 1 year of service, the beneficiary shall receive the return of member contributions and total interest earned plus a matching death benefit which is limited to a maximum of \$5,000.

\* However, if the death occurred more than 180 calendar days after the member's last day in pay status, or if the deceased had applied for a refund of contributions or terminated employment, the lump sum will be the same as if the member had less than one year of service and the death was not job-related.



## Deferred Retirement Option Plan (DROP)

A member may elect to participate in the Deferred Retirement Option Plan (DROP) upon completion of at least 25 years of creditable service (excluding sick leave) and attainment of at least 52 years of age. Under the DROP, the member may defer receipt of a retirement allowance and continue employment for a period not to exceed five years, nor to be less than three years. At the end of this period, the member may withdraw from active service and receive the retirement benefit based on his or her years of service credit at the time of enrollment in the DROP, and also receive a payment for the deferred retirement benefits, employee contributions while participating in the DROP, and interest earned on DROP deposits.

The effect of Act 2011-27 is that no new participants will be allowed to enter DROP with an effective participation date after June 1, 2011.

## Member Contributions

### Tier I

Members hired prior to January 1, 2015: Each member contributes 10% of salary. DROP participants continue to contribute during the DROP period, but receive a refund of these contributions with interest upon retirement.

Members hired after January 1, 2015: Each member contributes 8.5% of salary.

### Tier II

Members hired prior to January 1, 2015: Each member contributes 10% of salary. DROP participants continue to contribute during the DROP period, but receive a refund of these contributions with interest upon retirement.

Members hired after January 1, 2015: Each member contributes 7% of salary.

## 3 - SPECIAL PRIVILEGES AT RETIREMENT – ALL MEMBERS

In lieu of the full retirement allowance, any member may, at retirement, elect to receive a reduced retirement allowance equal in value to the full allowance, with the provision that:

Option 1. If the member dies before the annuity payments equal or exceed the present value of the member's annuity at the date of retirement, the balance is paid to a designated beneficiary or to the estate, or





Option 2. After the member's death, the member's allowance is continued throughout the life of the designated beneficiary, or

Option 3. After the member's death, one half of the member's allowance is continued throughout the life of the designated beneficiary, or

Option 4. Some other benefit is paid either to the member or to the designated beneficiary provided such benefit, together with the reduced retirement allowance, is of equivalent actuarial value to his retirement allowance and is approved by the Board of Control.



**SCHEDULE C**

**STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS**

**The assumptions and methods used in the valuation were selected based on the actuarial experience study prepared as of September 30, 2015, submitted to and adopted by the Board on September 29, 2016.**

INVESTMENT RATE OF RETURN: 7.70% per annum, compounded annually, including price inflation at 2.75%.

SALARY INCREASES: Representative values of the assumed annual rates of future salary increases are as follows:

**STATE AND LOCAL EMPLOYEES**

<b>Service</b>	<b>Annual Rate *</b>
0	5.00 %
1-5	4.00
6-10	3.75
11-15	3.50
16 & Over	3.25

*\*Includes wage inflation at 3.00% per annum.*

**STATE POLICEMEN**

4.50% per year for all years of service, including wage inflation at 3.00% per annum.



**SEPARATIONS FROM ACTIVE SERVICE- STATE AND LOCAL EMPLOYEES**

TERMINATION: Representative values of the assumed annual rates of withdrawal are shown in the following tables:

**REGULAR MEMBERS**

Annual Rate of Withdrawal\*  
Years of Service

<u>Age</u>	<u>0-4</u>		<u>5-9</u>		<u>10-20</u>		<u>20+</u>	
	Male	Female	Male	Female	Male	Female	Male	Female
20	24.00%	33.00%	9.00%	12.00%	5.00%	6.50%	1.50%	1.50%
25	19.50	23.00	8.50	11.00	5.00	6.50	1.50	1.50
30	17.50	20.00	7.00	8.25	4.00	5.25	1.50	1.50
35	16.00	18.00	6.50	7.50	3.25	5.25	1.50	1.50
40	15.50	17.00	5.50	7.25	3.00	3.50	1.50	1.50
45	13.50	15.50	5.00	6.50	2.75	3.50	1.50	1.50
50	13.00	14.50	5.00	6.25	2.50	3.50	1.50	1.50
55	11.50	14.00	5.00	5.50	2.50	3.50	1.50	1.50
60	11.50	15.00	5.50	6.00	2.50	3.50	1.50	1.50
65	15.50	16.00	7.50	8.50	2.75	3.50	1.50	1.50
69	15.50	16.00	7.50	8.50	2.75	3.50	1.50	1.50

*There are no withdrawal decrements after eligibility for service retirement.*

**CERTIFIED FIREFIGHTERS, POLICE OFFICERS, OR CORRECTIONAL OFFICERS (FLC MEMBERS)**

Annual Rate of Withdrawal\*  
Years of Service

<u>Age</u>	<u>0-4</u>	<u>5-9</u>	<u>10-20</u>	<u>20+</u>
20	17.00%	6.50%	3.25%	1.25%
25	14.50	6.50	3.25	1.25
30	13.50	6.00	3.25	1.25
35	13.50	5.50	3.25	1.25
40	13.00	5.00	2.50	1.25
45	12.50	4.50	2.25	1.25
50	11.00	4.50	2.25	1.25
55	10.00	4.50	2.00	1.25
60	12.00	5.50	2.00	1.25
65	17.00	6.00	2.00	1.25
69	17.00	6.00	2.00	1.25

*There are no withdrawal decrements after eligibility for service retirement.*

\* For local employers with fewer than 25 employees the rates are multiplied by 50%.



SERVICE RETIREMENT: The assumed annual rates of service retirement are as follows:

**REGULAR MEMBERS**

Age	Annual Rate <sup>1</sup>			
	TIER I <sup>2</sup>		TIER II	
	<u>1<sup>ST</sup> Eligible</u>	<u>Subsequent</u>	<u>1<sup>ST</sup> Eligible</u>	<u>Subsequent</u>
50 & Under	18.00%	11.50%		
51 to 56	20.00	11.50		
57	25.00	11.50		
58 to 59	25.00	15.00		
60	13.00	17.00		
61	13.00	13.00		
62	25.00	25.00	50.00%	
63	25.00	20.00	25.00	20.00%
64	25.00	20.00	25.00	20.00
65	35.00	25.00	35.00	25.00
66	35.00	30.00	35.00	30.00
67	35.00	25.00	35.00	25.00
68	35.00	21.00	35.00	21.00
69 to 74	35.00	21.00	35.00	20.00
75 & Above	100.00	100.00	100.00	100.00

<sup>1</sup>For local employers with fewer than 25 employees we assume that all members retire upon first eligibility for a service retirement benefit.

<sup>2</sup>25% are assumed to retire at age 60 with 25 years of service and 17% are assumed to retire at age 60 with 26 or more years of service.

**FLC MEMBERS**

Age	Annual Rate <sup>1</sup>			
	TIER I <sup>2</sup>		TIER II	
	<u>1<sup>ST</sup> Eligible</u>	<u>Subsequent</u>	<u>1<sup>ST</sup> Eligible</u>	<u>Subsequent</u>
50 & Under	40.00%	25.00%		
51 to 55	40.00	20.00		
56	40.00	20.00	15.00%	15.00%
57 to 59	40.00	17.00	15.00	15.00
60	15.00	15.00	15.00	15.00
61	40.00	18.00	15.00	15.00
62	40.00	28.00	40.00	28.00
63	40.00	28.00	40.00	28.00
64	40.00	21.00	40.00	21.00
65	40.00	25.00	40.00	25.00
66	40.00	40.00	40.00	40.00
67 to 74	40.00	30.00	40.00	30.00
75 & Above	100.00	100.00	100.00	100.00

<sup>1</sup>For local employers with fewer than 25 employees we assume that all members retire upon first eligibility for a service retirement benefit.

<sup>2</sup>40% are assumed to retire at age 60 with 25 years of service and 20% are assumed to retire at age 60 with 26 or more years of service.



DEATH AND DISABILITY: Representative values of the assumed annual rates of death and disability are as follows:

**STATE EMPLOYEES**

Age	Death		Annual Rate of Disability				
			Tier I		Service >=25	Tier II	
	Male	Female	Service < 25			Male	Female
			Male	Female	Male		
20	0.023%	0.009%	0.060%	0.052%		0.060%	0.052%
25	0.025	0.010	0.090	0.074		0.090	0.074
30	0.029	0.012	0.117	0.100		0.117	0.100
35	0.051	0.022	0.151	0.187		0.151	0.187
40	0.071	0.033	0.405	0.372		0.405	0.372
45	0.099	0.053	0.630	0.559	0.250%	0.630	0.559
50	0.141	0.079	1.155	0.898	0.250	1.155	0.898
55	0.200	0.114	1.530	1.400	0.250	1.530	1.400
60	0.297	0.161	0.500	1.000	0.250	2.000	1.000
65	0.416	0.229	0.500	1.000	0.250	0.500	1.000
69	0.492	0.286					

**LOCAL EMPLOYEES**

Age	Death		Annual Rate of Disability				
			Tier I		Service >=25	Tier II	
	Male	Female	Service < 25			Male	Female
			Male	Female	Male		
20	0.023%	0.009%	0.040%	0.040%		0.040%	0.040%
25	0.025	0.010	0.060	0.057		0.060	0.057
30	0.029	0.012	0.078	0.077		0.078	0.077
35	0.051	0.022	0.101	0.144		0.101	0.144
40	0.071	0.033	0.270	0.286		0.270	0.286
45	0.099	0.053	0.500	0.430	0.250%	0.500	0.430
50	0.141	0.079	0.900	0.691	0.250	0.900	0.691
55	0.200	0.114	1.400	1.000	0.250	1.400	1.000
60	0.297	0.161	0.500	0.250	0.250	2.000	1.000
65	0.416	0.229	0.500	0.250	0.250	0.500	0.250
69	0.492	0.286					



**STATE POLICEMEN**

**MEMBERS HIRED BEFORE JANUARY 1, 2015**

<u>Annual Rate of</u>								
<u>Death</u>			<u>Disability</u>	<u>Withdrawal Service</u>		<u>Retirement</u>		
<u>Age</u>	<u>Male</u>	<u>Female</u>		<u>0-4</u>	<u>5+</u>	<u>10-19</u>	<u>20-24</u>	<u>25+</u>
20	0.023%	0.009%	0.080%	2.00%	2.00%			
25	0.025	0.010	0.100	2.00	2.00			
30	0.029	0.012	0.140	2.00	2.00			
35	0.051	0.022	0.220	2.00	1.00			
40	0.071	0.033	0.340	2.00	1.00			40.00%
45	0.099	0.053	0.460	5.00	1.00			40.00
50	0.141	0.079	0.600					40.00
55	0.200	0.114				5.00%	35.00%	35.00
60	0.297	0.161				25.00	25.00	25.00
62	0.346	0.183				25.00	25.00	25.00
65	0.416	0.229				100.00	100.00	100.00

**MEMBERS HIRED AFTER JANUARY 1, 2015**

**RATES OF WITHDRAWAL**

<u>Annual Rate of Withdrawal</u>				
<u>Years of Service</u>				
<u>Age</u>	<u>0-4</u>	<u>5-9</u>	<u>10-20</u>	<u>20+</u>
20	17.00%	6.50%	3.25%	1.25%
25	14.50	6.50	3.25	1.25
30	13.50	6.00	3.25	1.25
35	13.50	5.50	3.25	1.25
40	13.00	5.00	2.50	1.25
45	12.50	4.50	2.25	1.25
50	11.00	4.50	2.25	1.25
55	10.00	4.50	2.00	1.25
60	12.00	5.50	2.00	1.25
65	17.00	6.00	2.00	1.25
69	17.00	6.00	2.00	1.25

*There are no withdrawal decrements after eligibility for service retirement.*



## RATES OF SERVICE RETIREMENT

Age	Annual Rate			
	TIER I <sup>1</sup>		TIER II	
	<u>1<sup>ST</sup> Eligible</u>	<u>Subsequent</u>	<u>1<sup>ST</sup> Eligible</u>	<u>Subsequent</u>
50 & Under	40.00%	25.00%		
51 to 55	40.00	20.00		
56	40.00	20.00	15.00%	15.00%
57 to 59	40.00	17.00	15.00	15.00
60	15.00	15.00	15.00	15.00
61	40.00	18.00	15.00	15.00
62	40.00	28.00	40.00	28.00
63	40.00	28.00	40.00	28.00
64	40.00	21.00	40.00	21.00
65	40.00	25.00	40.00	25.00
66	40.00	40.00	40.00	40.00
67 to 74	40.00	30.00	40.00	30.00
75 & Above	100.00	100.00	100.00	100.00

<sup>1</sup> 40% are assumed to retire at age 60 with 25 years of service and 20% are assumed to retire at age 60 with 26 or more years of service.

## RATES OF DEATH AND DISABILITY

Age	Annual Rate of						
	Death		Disability				
			Tier I		Tier II		
			Service < 25	Service >=25			
Male	Female	Male	Female		Male	Female	
20	0.023%	0.009%		0.052%		0.060%	0.052%
25	0.025	0.010	0.060%	0.074		0.090	0.074
30	0.029	0.012	0.090	0.100		0.117	0.100
35	0.051	0.022	0.117	0.187		0.151	0.187
40	0.071	0.033	0.151	0.372		0.405	0.372
45	0.099	0.053	0.405	0.559	0.250%	0.630	0.559
50	0.141	0.079	0.630	0.898	0.250	1.155	0.898
55	0.200	0.114	1.155	1.400	0.250	1.530	1.400
60	0.297	0.161	1.530	1.000	0.250	2.000	1.000
65	0.416	0.229	0.500	1.000	0.250	0.500	1.000
69	0.492	0.286	0.500				



**DEATH AFTER RETIREMENT:** The rates of mortality for the period after service retirement are according to the sex distinct RP-2000 Blue Collar Mortality Table Projected with Scale BB to 2020 with an adjustment of 125% at all ages for males and 120% for females at ages on and after age 78. The rates of mortality for the period after disability retirement are according to the sex distinct RP-2000 Disabled Retiree Mortality Table Projected with Scale BB to 2020 with an adjustment of 130% at all ages for females. Representative values of assumed mortality are as follows:

<u>Age</u>	<u>Service Retirement</u>		<u>Disability Retirement</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
55	0.4939%	0.2528%	3.3375%	1.9456%
60	0.8983	0.4048	3.6532	2.3221
65	1.5257	0.8167	3.9411	2.8618
70	2.4722	1.4637	4.6257	3.8430
75	3.9850	2.4262	6.0659	5.3334
80	6.5180	4.6142	8.0841	7.3840
85	10.6322	7.8329	10.4664	10.2321
90	18.2107	13.1471	14.7009	14.5932

**DEATH IN ACTIVE SERVICE BENEFIT:** For those eligible for service retirement who die in active service, it is assumed that 75% of beneficiaries will elect the lump sum death benefit and 25% will elect the Option 3 allowance.

**BENEFITS PAYABLE UPON SEPARATION FROM SERVICE:** For active members who separate from service prior to eligibility for a service retirement allowance, the liability is assumed to be the greater of the value of the refund of contributions and the value of the deferred annuity.

**UNUSED SICK LEAVE:** 2.25% load on service retirement liabilities for active members (No load for Tier II members).

**PERCENT MARRIED:** 100% of employees are assumed to be married, with the wife 3 years younger than the husband.

**ACTUARIAL METHOD:** Individual entry age normal cost method. Actuarial gains and losses are reflected in the unfunded actuarial accrued liability.

**ASSET METHOD:** Market value.

**LIABILITY FOR CURRENT INACTIVE MEMBERS:** Member Contribution Balance is multiplied by a factor of 3.0 for vested local employees with incomplete data and by a factor of 1.0 for all non-vested inactive members.

**LIABILITY FOR POST-DROP ACTIVE MEMBERS:** Members are assumed to retire immediately and receive their accrued benefit.

**COLA:** No future ad hoc cost of living adjustments (COLAs) are assumed.

**FUTURE SERVICE CREDIT:** One year of creditable service per year of employment.