



2015-2016 Proposed Actuarial Assumption Changes

MSRS-General, PERA-General, and TRA

Economic Assumptions p. 1
Demographic Assumptions p. 2-5
Miscellaneous and Technical Assumptions..... p. 5

Economic Assumptions			
	MSRS-General	PERA-General	TRA
Interest rate			
Current	8%	8%	8.5%
Proposed	No Change	No change	8%
Price inflation			
Current	2.75%	2.75%	3.00%
Proposed	No Change	No change	2.75%
Payroll growth			
Current	3.50%	3.50%	3.75%
Proposed	No change	No change	3.50%
Merit salary scale			
Current	Service-based scale, sample rates: Year 1 = 10.25% Year 5 = 5.45% Year 10 = 4.15% Year 15 = 3.45% Years 17+ = 3.25%	Service-based scale, sample rates: Year 1 = 11.78% Year 5 = 5.72% Year 10 = 4.17% Year 15 = 3.45% Years 18+ = 3.25%	Service-based scale, sample rates: Year 1 = 12.00% Year 5 = 7.25% Year 10 = 6.40% Year 15 = 5.25% Year 20 = 4.00% Years 25+ = 3.50%
Proposed	Service-based scale, sample rates: Year 1 = 14.00% Year 5 = 5.25% Year 10 = 4.25% Year 15 = 4.00% Year 20 = 3.75% Years 25+ = 3.50%	Service-based scale, sample rates: Year 1 = 11.50% Year 5 = 5.50% Year 10 = 4.50% Year 15 = 3.90% Year 20 = 3.75% Years 26+ = 3.50%	Service-based scale, sample rates: Year 1 = 9.50% Year 5 = 7.00% Year 10 = 6.25% Year 15 = 5.00% Year 20 = 4.10% Years 26+ = 3.50%

2015-2016 Proposed Actuarial Assumption Changes

Demographic Assumptions			
	MSRS-General	PERA-General	TRA
Mortality			
Retiree mortality			
Current			
Males	RP-2000 Annuitant Generational Mortality Table, white collar, mortality improvement scale AA	RP-2000 White Collar Male Annuitant Generational Mortality Table	RP-2000 White Collar Male Annuitant Generational Mortality Table, set back 2 years
Females	RP-2000 Annuitant Generational Mortality Table, white collar, mortality improvement scale AA	RP-2000 White Collar Female Annuitant Generational Mortality Table, set back 2 years	RP-2000 White Collar Female Annuitant Generational Mortality Table, set back 3 years
Proposed			
Males	RP-2014 White Collar Male Healthy Annuitant Mortality Table, set forward 2 years, MP-2015 improvement scale	RP-2014 White Collar Male Healthy Annuitant Generational Mortality Table, set forward 2 years, MP-2015 improvement scale	RP-2014 White Collar Male Healthy Annuitant Mortality Table, set back 3 years, rates at ages before 70 multiplied by 0.80 and rates at ages over 70 multiplied by 1.478, with some blending of rates around age 70, MP-2015 improvement scale
Females	RP-2014 White Collar Female Healthy Annuitant Mortality Table, MP-2015 improvement scale	RP-2014 White Collar Female Healthy Annuitant Generational Mortality Table, multiplied by 0.9 at all ages, MP-2015 improvement scale	RP-2014 White Collar Female Healthy Annuitant Mortality Table, set back 3 years, rates at ages before 75 multiplied by 0.85 and rates at ages over 75 multiplied by 1.362, with some blending of rates around age 75, MP-2015 improvement scale
Disabilitant mortality			
Current			
Males	RP-2000 Disabled Mortality Table, no setback	RP-2000 Disabled Retiree Mortality Table, set back 4 years	Age-related rates, based on experience
Females	RP-2000 Disabled Mortality Table set forward 5 years	RP-2000 Disabled Retiree Mortality Table, set forward 7 years	Age-related rates, based on experience

2015-2016 Proposed Actuarial Assumption Changes

Demographic Assumptions			
	MSRS-General	PERA-General	TRA
Mortality			
Disabilitant mortality, cont.			
Proposed			
Males	RP-2014 Male Disabled Retiree Mortality Table, set forward 2 years, MP-2015 improvement scale	RP-2014 Male Disabled Retiree Generational Mortality Table, set forward 1 year, MP-2015 improvement scale	RP-2014 Male Disabled Retiree Mortality Table, without generational improvement
Females	RP-2014 Female Disabled Retiree Mortality Table, set forward 4 years, MP-2015 improvement scale	RP-2014 Female Disabled Retiree Generational Mortality Table, set forward 6 years, MP-2015 Improvement scale	RP-2014 Female Disabled Retiree Mortality Table, without generational improvement
Active member mortality			
Current			
Males	RP-2000 White Collar Employee Generational Mortality Table, set forward 3 years, mortality improvement scale AA	RP-2000 White Collar Male Employee Generational Mortality Table, set forward 5 years	RP-2000 White Collar Male Employee Generational Mortality Table, set back 5 years
Females	RP-2000 White Collar Employee Generational Mortality Table, set back 1 year, mortality improvement scale AA	RP-2000 White Collar Female Employee Generational Mortality Table, set back 3 years	RP-2000 White Collar Female Employee Generational Mortality Table, set back 7 years
Proposed			
Males	RP-2014 Employee White Collar Male Employee Mortality Table, set forward 1 year, MP-2015 improvement scale	RP-2014 White Collar Male Employee Generational Mortality Table, set forward 1 year, MP-2015 improvement scale	RP-2014 White Collar Male Employee Mortality Table, set back 6 years, MP-2015 improvement scale
Females	RP-2014 Employee White Collar Female Employee Mortality Table, MP-2015 improvement scale	RP-2014 White Collar Female Employee Generational Mortality Table, set back 1 year, MP-2015 improvement scale	RP-2014 White Collar Female Employee Mortality Table, set back 5 years, MP-2015 improvement scale

2015-2016 Proposed Actuarial Assumption Changes

Demographic Assumptions									
MSRS-General				PERA-General			TRA		
Retirement rates - current									
Age	Normal Unreduced	Early Rule of 90	Early Reduced	Normal Unreduced	Early Rule of 90	Early Reduced	Normal Unreduced	Early Rule of 90	Early Reduced
55	-	20%	5%	-	20%	6%	-	50%	7%
56	-	15%	5%	-	20%	6%	-	55%	7%
57	-	15%	5%	-	20%	6%	-	45%	7%
58	-	15%	5%	-	20%	7%	-	45%	8%
59	-	20%	6%	-	20%	8%	-	45%	10%
60	-	20%	7%	-	20%	8%	-	40%	12%
61	-	22%	12%	-	25%	12%	-	45%	16%
62	-	40%	22%	-	35%	20%	-	45%	20%
63	-	30%	22%	-	25%	16%	-	40%	18%
64	-	30%	16%	-	25%	18%	-	45%	20%
65	40%	-	18%	35%	-	35%	40%	-	40%
66	30%	-	-	25%	-	-	35%	-	-
67	25%	-	-	20%	-	-	30%	-	-
68	25%	-	-	20%	-	-	30%	-	-
69	25%	-	-	20%	-	-	30%	-	-
70	30%	-	-	20%	-	-	35%	-	-
71+*	100%	-	-	100%	-	-	100%	-	-

Retirement rates - proposed												
Age	Unreduced		Reduced		Unreduced		Reduced		Tier I [†]		Tier II [‡]	
	Normal	Rule of 90	Tier I [†]	Tier II [‡]	Normal	Rule of 90	Tier I [†]	Tier II [‡]	Early	Unreduced	Early	Unreduced
55	-	15%	4%	4%	-	20%	5%	5%	5%	35%	5%	-
56	-	15%	4%	4%	-	15%	5%	5%	10%	35%	5%	-
57	-	12.5%	4%	4%	-	15%	5%	5%	10%	35%	5%	-
58	-	12.5%	4%	4%	-	15%	6%	5%	10%	35%	5%	-
59	-	15%	6%	5%	-	15%	7%	6%	14%	35%	5%	-
60	-	15%	8%	5%	-	15%	8%	7%	17%	35%	6%	-
61	-	20%	10%	10%	-	18%	10%	9%	20%	35%	15%	-
62	-	30%	20%	15%	-	35%	20%	15%	25%	35%	15%	-
63	-	25%	18%	15%	-	25%	20%	15%	25%	35%	15%	-
64	-	25%	18%	15%	-	25%	25%	15%	25%	35%	20%	-
65	35%	-	-	20%	32.5%	-	-	25%	-	35%	30%	-
66	30%	-	-	-	25.0%	-	-	-	-	40%	-	35% [§]
67	25%	-	-	-	20.0%	-	-	-	-	35%	-	30% [§]
68	25%	-	-	-	17.5%	-	-	-	-	30%	-	25% [§]
69	22%	-	-	-	15.0%	-	-	-	-	30%	-	25% [§]
70	30%	-	-	-	17.5%	-	-	-	-	35%	-	35%
71+*	100%	-	-	-	100%	-	-	-	-	100%	-	100%

* Members reaching 100% retirement eligibility will delay retirement one year

† Tier 1: Pre-7/1/1989 hires

‡ Tier 2: Post-6/30/1989 hires

§ Coordinated Tier 2 members age 62 with 30 or more years of service have 5% added to their early retirement rates

2015-2016 Proposed Actuarial Assumption Changes

Demographic Assumptions								
MSRS-General			PERA-General		TRA			
Termination of employment (withdrawal)								
Current	Select rates, first 3 years:			Select rates, service-based:		Select rates, first 3 years:		
		<u>Males</u>	<u>Females</u>			<u>Males</u>	<u>Females</u>	
	1st year	45%	48%	1st year =	40%	1st year	45%	40%
	2nd year	14%	15%	2nd year =	15%	2nd year	12%	10%
	3rd year	9%	10%	3rd year =	10%	3rd year	6%	8%
	Ultimate rates based on age, beginning at 6.90% (males)/8.55% (females) at age 20, gradually declining to 0% at age 55.			Ultimate rates based on age, beginning at 8.4% at age 20, gradually declining to 0% at age 55.		Ultimate rates based on age, beginning at 3.70% (males)/4.5% (females) at age 20, gradually declining to 0% at age 55.		
Proposed	Service-based table. Withdrawal rates begin at 20% (males)/24% (females) in Year 1 and gradually decline to 1% for both after 30 years of service.			Service-based table. Withdrawal rates begin at 25% in Year 1 and gradually decline to 1% (males) and 1.5% (females) after 30 years of service.		Service-based table. Withdrawal rates begin at 32% (males)/29% (females) in Year 1 and gradually decline to 0.5% for both after 25 years of service.		
	Disability rates							
Current	Age-related rates.			Age-based table.		Age-related rates.		
Proposed	Lower rates, adopt same table for males/females.			Rates lowered to approximately 60-75% of current.		No change		

Miscellaneous and Technical Assumptions									
MSRS-General			PERA-General		TRA				
Marital status									
Current	Males	85% are married		Males	75% are married		Males	85% are married	
	Females	70% are married		Females	70% are married		Females	65% are married	
Proposed	Males	80% are married		Males	80% are married		No change		
	Females	65% are married		Females	70% are married				
Form of payment (optional annuity forms)									
Current		<u>Males</u>	<u>Females</u>		<u>Males</u>	<u>Females</u>		<u>Males</u>	<u>Females</u>
	25% J&S	--	--	25% J&S	5%	5%	25% J&S	--	--
	50% J&S	15%	15%	50% J&S	15%	5%	50% J&S	8.50%	13.0%
	75% J&S	10%	0%	75% J&S	10%	5%	75% J&S	12.75%	6.5%
	100% J&S	50%	25%	100% J&S	30%	15%	100% J&S	59.50%	32.5%
	Single Life	remaining		Single Life	40%	70%	Single Life	19.25%	48.0%
Proposed		<u>Males</u>	<u>Females</u>		<u>Males</u>	<u>Females</u>		<u>Males</u>	<u>Females</u>
	25% J&S	--	--	25% J&S	10%	10%	25% J&S	--	--
	50% J&S	15%	15%	50% J&S	15%	10%	50% J&S	10%	13.5%
	75% J&S	15%	10%	75% J&S	10%	5%	75% J&S	10%	6.5%
	100% J&S	50%	30%	100% J&S	35%	15%	100% J&S	60%	35.0%
	Single Life	remaining		Single Life	30%	60%	Single Life	20%	45.0%