City of Warwick, Rhode Island Police II Pension Fund

ACTUARIAL VALUATION AS OF JULY 1, 2023

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SECTION A

DISCUSSION

I. Purpose and Summary

This report presents the results of our July 1, 2023 actuarial valuation of the City of Warwick, Rhode Island Police II Pension Fund. The valuation was performed at the request of the City of Warwick for purposes of determining the employer and member contribution rates for the City's fiscal year beginning July 1, 2024.

The total contribution level for the 2024-2025 fiscal year is 55.29% of covered earnings as compared to 56.20% of covered earnings determined by the previous valuation. In accordance with the City's ordinances, two-thirds of the cost (or 36.86% of earnings) will be met by the City, with the remaining one-third (or 18.43%) contributed by covered active members.

The member contribution rate of 18.43% is a blended rate between Tier I and Tier II members where the difference between the two is a constant 3.77%. Based on this difference and the size of the current population of active members, that produces a member contribution rate of 20.68% for Tier I members and 16.91% for Tier II members.

The development of the valuation results is shown in Tables 1 through 10 and is described in more detail on the following pages.

II. Membership Data

The City furnished data for active and retired members as of December 31, 2022. The data was projected to July 1, 2023 for valuation purposes reflecting anticipated age, salary and benefit increases, with adjustment due to data questions response. Although we did not audit this data, we did review it for reasonableness and consistency with the data collected for the previous valuation (prepared as of July 1, 2022). Table 4 provides a distribution by age and service for active members. There were eight inactive, non-retired members entitled to a future retirement benefit or a future refund.

III. Plan Provisions

A summary of the principal plan provisions recognized for purposes of the valuation is provided in Table 9. There were no changes to this plan adopted since the last actuarial valuation.

IV. Assets

The City of Warwick furnished asset information for the fiscal year ending June 30, 2023. Tables 3a, 3b, and 3c provide information about the composition of plan assets and the development of valuation assets.

The asset value used in the determination of the annual contribution level is set equal to the market value of assets, adjusted to phase in the difference between actual and expected investment return over five years, at 20% per year. As shown in Table 3c, the market value of assets on June 30, 2023 was $239,754,381 while the valuation assets were $248,696,622, or 103.7% of the market value.

As shown in Table 3b, the dollar-weighted rate of return on the market value of assets for FY 2023 was 11.34%, while the return on the actuarial value of assets was higher at 5.04% reflecting deferred losses from this year's market value return. This return is net of all investment expenses.

V. Actuarial Methods and Assumptions

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. We have updated the mortality projection scales to the ultimate rates of the most recently published ones since the prior valuation. The combined effect of the assumptions used in this valuation is expected to have no significant bias.

We believe the assumptions are internally consistent and are reasonable, based on the actual experience of the City of Warwick, Rhode Island Police II Pension Fund. The combined effect of the assumptions used in this valuation is expected to have no significant bias.

VI. Funding Policy

The plan is funded on an actuarially determined basis in accordance with the City's pension ordinances. The contribution amount determined by the July 1, 2016 valuation is projected with assumed overall wage inflation (2.75%) to determine the statutory contribution level for the 2023-2024 fiscal year. As shown in Table 2 the increases in accrued liability as of July 1, 2020 due to the change in mortality assumptions will be partially recognized with the previous valuation to the extent the increases were offset by other assumption changes and then the remainder ratably recognized over a two-year period beginning in the fiscal year 2024 according to the schedule. This was done to provide a partial phase in to the higher contribution levels.

VII. Analysis of Changes

The following shows a reconciliation of the contribution rate from the prior valuation to the new rate set by this valuation.

Contribution rate set by prior valuation	56.20%
Changes in 2020 assumptions (see note below)	1.41
Demographic and payroll changes	(3.86)
Changes in 2023 assumptions	(0.72)
Asset Performance	2.26
Contribution rate set by current valuation	55.29%

As shown, the largest impacts were the gains of demographic and payroll changes, partially offset by the further recognition of the 2020 assumption changes of 1.41% and 2.26% from asset performance. A projection of this pattern is shown on Table 6.

The funded ratio increased from 81.56% to 81.69%. The funded status measure alone is not appropriate for assessing the need for future contributions. Also, the funded status is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.

VIII.   Future Expectations

With the Tier II benefit provisions for new hires, the normal cost (and ultimately the total contribution requirement) should begin to trend slowly lower over the next decade as members in Tier I or in the Police I Pension Fund who terminate or retire are replaced by members in Tier II. We recommend the City for continuing to meet its actuarial contribution requirements as dictated by the approved funding policy. If the City continues to meet those obligations, we anticipate the funded ratio will increase consistently towards 100%.

IX.   Certification

This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

We certify that the information included herein and contained in this Actuarial Valuation Report is accurate and fairly presents the actuarial position of the City of Warwick, Rhode Island Police II Pension Fund as of the valuation date.

All of our work conforms with generally accepted actuarial principles and practices, and to the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board.

The undersigned are independent actuaries and consultants. Joseph P. Newton and Paul T. Wood are Members of the American Academy of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries. Finally, both of the undersigned are experienced in performing valuations for large public retirement systems.

We are available to answer any questions in connection with this valuation of the plan or the information presented in this report.

Joseph P. Newton, FSA, EA, MAAA
Pension Market Leader

Paul T. Wood, ASA, FCA, MAAA
Senior Consultant

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SECTION B

TABLES

Table 1

Valuation Results

				July 1, 2023		July 1, 2022
A.	**Membership Data**					
	1.	Active members				
		a.	Number	170		167
		b.	Annualized Salaries	$ 15,312,902	$	14,638,009
		c.	Average pay	$ 90,076	$	87,653
		d.	Average attained age	38.2		38.4
		e.	Average past service	10.8		11.2
	2.	Retired members and beneficiaries				
		a.	Number	241		236
		b.	Average benefit	$ 60,131	$	58,594
		c.	Average attained age	62.2		61.5
	3.	Inactive members (Vesting)				
		a.	Number	3		2
		b.	Average benefit	$ 25,126	$	21,912
		c.	Average attained age	43.1		44.5
B.	**Liabilities**					
		Actuarial accrued liability				
	1.	a.	Active members	$ 66,946,223	$	67,826,164
		b.	Retired members and beneficiaries	236,171,508		228,784,985
		c.	Inactive members	1,305,105		911,711
		d.	Total	$ 304,422,836	$	297,522,860
	2.	Valuation assets		$ 248,696,622	$	242,645,935
	3.	Unfunded actuarial accrued liability [(1)(d)-(2)]		$ 55,726,214	$	54,876,925
	4.	Funded Ratio [(2)/(1)(d)]		81.69%		81.56%
C.	**Determination of City Contribution for FY+1**					
	1.	Normal cost		$ 4,485,684	$	4,568,568
	2.	Amortization charges		$ 4,723,743	$	4,281,031
	3.	Total annual contribution		$ 9,209,427	$	8,849,599
	4.	Projected Covered Payroll		$ 16,656,006	$	15,745,502
	5.	Annual contribution as a percentage of covered payroll [(3) / (4)]		55.29%		56.20%
	6.	Annual City contribution as a percentage of payroll [2/3 x (5)]		36.86%		37.47%
	7.	Member contribution rate [(5) - (6)]		18.43%		18.73%
		a. Tier I Rate		20.68%		20.76%
		b. Tier II Rate		16.91%		16.99%

Table 2

Summary of Amortization Bases

Date Established	Purpose	Initial Amount	Remaining Balance as of July 1, 2023	2024 - 2025 Amortization Payment *	Years Remaining as of June 2024
7/14	Fresh Start, Offsetting of Prior Bases	$ 23,498,366	$ 22,305,991	$ 1,960,340	15
7/15	2015 Experience (Gain)/Loss	(1,868,979)	(1,774,142)	(155,919)	15
7/16	2016 Experience (Gain)/Loss	2,085,352	1,854,581	190,105	12
** 7/16	2016 Assumption Change - FY19 Stagger	3,179,680	3,407,017	313,753	14
** 7/16	2016 Assumption Change - FY20 Stagger	3,179,680	3,714,282	326,425	15
** 7/16	2016 Assumption Change - FY21 Stagger	3,179,680	4,033,958	339,610	16
** 7/16	2016 Assumption Change - FY22 Stagger	3,179,680	4,366,545	353,326	17
** 7/16	2016 Assumption Change - FY23 Stagger	3,179,680	4,712,565	367,597	18
7/17	2017 Experience (Gain)/Loss	(943,623)	(945,827)	(87,101)	14
7/18	2018 Experience (Gain)/Loss	(485,661)	(496,443)	(43,630)	15
7/19	2019 Experience (Gain)/Loss	1,475,351	1,532,182	128,991	16
7/20	2020 Experience (Gain)/Loss	2,757,197	2,899,423	234,612	17
** 7/20	2020 Assumption Change - FY22 Stagger	4,032,939	4,240,972	343,165	17
** 7/20	2020 Assumption Change - FY24 Stagger	2,446,100	2,988,182	225,293	19
** 7/20	2020 Assumption Change - FY25 Stagger	2,446,100	2,988,182	234,393	20
7/21	2021 Experience (Gain)/Loss	(1,119,206)	(1,188,217)	(92,686)	18
7/22	2022 Experience (Gain)/Loss	(63,616)	(68,005)	(5,127)	19
7/23	2023 Assumption Change	(1,348,767)	(1,348,768)	(105,797)	20
7/23	2023 Experience (Gain)/Loss	2,503,736	2,503,736	196,393	20
	Total		$ 55,726,214	$ 4,723,743	

 * Assuming payment made at the middle of the year.

 ** Assumption change staggers will begin in the fiscal year indicated and be 20 scheduled payments

Table 3A

Asset Information

Composition of Fund as of June 30, 2023

		Market Value	Percentage of Total
1.	Cash and equivalents	$ -	0.0%
2.	Equities, including index funds	168,067,821	70.1%
3.	Fixed income investments	71,686,560	29.9%
4.	Receivables less payables	-	0.0%
5.	Total	$ 239,754,381	100.0%

Table 3B

Asset Information

Asset Reconciliation and Expected Returns

Asset Information
Asset Reconciliation and Expected Returns

		FY 2020	FY 2021	FY 2022	FY 2023
1.	Beginning of year market value	210,257,908	208,004,463	266,467,262	221,035,910
2.	Contributions				
a.	City	4,610,514	5,037,561	5,003,559	5,647,942
b.	Member	2,347,752	2,447,961	2,500,022	2,902,070
c.	Other	150,000	2,340	-	360
d.	Total	7,108,266	7,487,862	7,503,581	8,550,372
3.	Benefits and admin expenses paid	(11,579,392)	(12,528,431)	(13,803,674)	(14,566,327)
4.	Net return	2,217,681	63,503,368	(39,131,259)	24,734,426
5.	End of year market value	208,004,463	266,467,262	221,035,910	239,754,381
6.	Net market return	1.07%	30.90%	-14.86%	11.34%
7.	Expected market value				
a.	Beginning of year	210,257,908	208,004,463	266,467,262	221,035,910
b.	Net cash flow	(4,471,126)	(5,040,569)	(6,300,093)	(6,015,955)
c.	Earnings assumption	6.90%	6.90%	6.90%	6.90%
d.	Expected earnings	14,356,115	14,181,309	18,172,513	15,047,389
e.	Excess/(shortfall)	(12,138,434)	49,322,059	(57,303,772)	9,687,037

* Contributions and market value of assets FY2019 has been revised based on the restated information.

Table 3C

Asset Information

Development of Actuarial Value of Assets (Police II)

	Year Ending July 1, 2023
1. Market value of assets at beginning of year	$ 221,035,9
2. Net new investments	
a. Contributions	$ 8,550,3
b. Benefits and admin expenses paid	(14,566,3
c. Subtotal	(6,015,9
3. Market value of assets at end of year	$ 239,754,3
4. Net earnings (3-1-2)	$ 24,734,4
5. Assumed investment return rate	6.9
6. Expected return	$ 15,047,3
7. Excess return (4-6)	$ 9,687,0

8. Development of amounts to be recognized as of June 30, 2023:

Fiscal Year End	Remaining Deferrals of Excess (Shortfall) of Investment Income* (1)	Offsetting of Gains/(Losses) (2)	Net Deferrals Remaining (3) = (1) + (2)	Years Remaining (4)	Recognized for this valuation (5) = (3) / (4)	Remaining aft this valuation (6) = (3) - (5)
2019	$ 0	$ 0	$ 0	1	$ 0	$
2020	0	0	0	2	0	
2021	0	0	0	3	0	
2022	(21,610,025)	9,687,037	(11,922,988)	4	(2,980,747)	(8,942,2
2023	9,687,037	(9,687,037)	0	5	0	
	$ (11,922,988)	$ 0	$ (11,922,988)		$ (2,980,747)	$ (8,942,2

9. Actuarial value of assets as of June 30, 2023 (Item 3 - Item 8)	$ 248,696,6
10. Ratio of actuarial value to market value	103

Table 4

Distribution of Active Members by Age and by Years of Service (Police II)

As of July 1, 2023

	Years of Credited Service												
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Total
Attained Age	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Co
Under 25	1	0	0	0	0	0	0	0	0	0	0	0	
	$51,168	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$51
25-29	5	5	9	5	4	3	0	0	0	0	0	0	
	$51,168	$62,452	$68,322	$76,002	$86,006	$89,509	$0	$0	$0	$0	$0	$0	$70
30-34	2	7	3	3	5	19	2	0	0	0	0	0	
	$51,168	$61,494	$70,477	$76,887	$87,600	$90,601	$100,726	$0	$0	$0	$0	$0	$81
35-39	1	2	1	0	2	7	15	0	0	0	0	0	
	$51,168	$58,217	$70,499	$0	$63,628	$96,089	$101,620	$0	$0	$0	$0	$0	$91
40-44	0	0	0	0	0	6	8	9	2	0	0	0	
	$0	$0	$0	$0	$0	$100,166	$104,592	$100,502	$110,287	$0	$0	$0	$102
45-49	0	0	0	0	0	1	0	8	9	1	0	0	
	$0	$0	$0	$0	$0	$93,702	$0	$100,881	$106,689	$142,784	$0	$0	$105
50-54	0	0	0	0	0	0	0	8	3	4	0	0	
	$0	$0	$0	$0	$0	$0	$0	$100,010	$97,730	$113,385	$0	$0	$103
55-59	0	0	0	0	0	0	0	2	3	4	0	1	
	$0	$0	$0	$0	$0	$0	$0	$106,278	$98,770	$119,565	$0	$87,653	$107
60-64	0	0	0	0	0	0	0	0	0	0	0	0	
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
65 & Over	0	0	0	0	0	0	0	0	0	0	0	0	
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Total	**9**	**14**	**13**	**8**	**11**	**36**	**25**	**27**	**17**	**9**	**0**	**1**	
	$51,168	**$61,368**	**$68,987**	**$76,334**	**$82,662**	**$93,257**	**$102,499**	**$100,896**	**$104,134**	**$119,398**	**$0**	**$87,653**	**$90**

Table 5

History of Investment Return Rates

Year Ending June 30 of (1)	Market (2)
2001	(13.52%)
2002	-3.93%
2003	5.22%
2004	15.04%
2005	9.49%
2006	8.73%
2007	15.65%
2008	-4.92%
2009	-16.26%
2010	14.16%
2011	22.24%
2012	0.68%
2013	11.99%
2014	15.71%
2015	2.30%
2016	-1.42%
2017	13.19%
2018	8.55%
2019*	4.03%
2020	1.07%
2021	30.90%
2022	-14.86%
2023	11.34%

Average Returns:
Last 5 Years	5.46%
Last 10 Years	6.46%

* The rate of return on the market value of assets FY2019 has been revised based on the restated information.

Table 6

Near Term Outlook

Valuation as of July 1,	Unfunded Actuarial Accrued Liability (UAAL)	Funded Ratio	Actuarial Value of Fund	For Fiscal Year Ending June 30,	Employer Contribution Rate	Covered Compensation	Employer Contributions	Employee Contributions	Benefit Payments and Refunds	Net External Cash Flow
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2023	$ 55,726,213	81.7%	$ 248,696,622	2024	37.5%	$ 16,210,224	$ 6,073,971	$ 3,036,175	$ 15,311,867	$ (6,201,7
2024	54,663,864	82.6%	259,372,387	2025	36.9%	16,656,005	6,139,403	3,069,702	15,982,427	(6,773,3
2025	53,547,984	83.5%	270,193,787	2026	36.3%	17,114,045	6,214,110	3,107,911	16,765,921	(7,443,9
2026	52,266,933	84.3%	281,066,551	2027	35.9%	17,584,681	6,307,625	3,154,692	17,575,785	(8,113,4
2027	50,780,526	85.2%	291,995,213	2028	35.5%	18,068,260	6,414,232	3,207,116	18,372,142	(8,750,7
2028	49,051,393	86.1%	303,016,911	2029	35.1%	18,565,137	6,523,789	3,261,895	19,162,910	(9,377,2

These projections are based on the current funding policy and assumes that all current assumptions are met each year in the future, including a 6.9% annual return on smoothed assets.

Table 7

Schedule of Funding Progress

Date (1)	Actuarial Value of Assets (AVA) (2)	Actuarial Accrued Liability (AAL) (3)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2) (4)	Funded Ratio (2)/(3) (5)	Annual Payroll (6)	UAAL as % of Payroll (4)/(6) (7)
July 1, 2011	$ 140,644,601	$ 162,563,786	$ 21,919,185	86.5%	$ 11,082,010	197.8%
July 1, 2013	147,587,524	182,130,783	34,543,259	81.0%	11,822,199	292.2%
July 1, 2014	163,070,867	186,157,733	23,086,866	87.6%	12,212,862	189.0%
July 1, 2015	175,253,154	196,709,719	21,456,565	89.1%	12,764,469	168.1%
July 1, 2016	183,553,638	223,166,775	39,613,137	82.2%	13,201,530	300.1%
July 1, 2017	192,618,919	232,361,869	39,742,950	82.9%	12,745,851	311.8%
July 1, 2018	203,195,759	243,489,800	40,294,040	83.5%	12,822,547	314.2%
July 1, 2019	211,791,057	254,389,181	42,598,124	83.3%	13,297,638	320.3%
July 1, 2020	219,462,471	274,421,675	54,959,204	80.0%	13,930,062	394.5%
July 1, 2021	236,176,021	291,050,837	54,874,816	81.1%	13,840,969	396.5%
July 1, 2022	242,645,935	297,522,860	54,876,925	81.6%	14,638,009	374.9%
July 1, 2023	248,696,622	304,422,836	55,726,214	81.7%	15,312,902	363.9%

TABLE 8

Actuarial Methods and Assumptions

Actuarial Cost Method:

Entry Age Normal actuarial cost method: Under this method, the normal cost is the amount calculated as the level percentage of pay necessary to fully fund each active member's prospective benefit from entry age to retirement age. The total actuarial accrued liability, which is re-determined for each individual member as of each valuation date, represents the theoretical accumulation of all prior years' normal costs for the active members as if the present plan had always been in effect, plus the liability for any retirees or beneficiaries. The unfunded actuarial accrued liability represents the excess of the total actuarial accrued liability over the valuation assets.

Amortization Policy:

The amortization of the UAAL is determined as a level percentage of payroll over a closed period using the process of "laddering". Bases that existed prior to this valuation continue to be amortized on their original schedule. New experience losses are amortized over individual periods of 20 years. New gains are offset against and amortized over the same period as the current largest outstanding loss which in turn decreases contribution rate volatility.

Asset Valuation Method:

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income. Offsetting unrecognized gains and losses are immediately recognized, with the shortest remaining bases recognized first and the net remaining bases continue to be recognized on their original timeframe. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses.

Actuarial Methods and Assumptions (Continued)

Actuarial Assumptions:

1. *Interest*   6.90% per year, net of investment expenses.

2 . *Salary Increases*   The sum of (i) a 3.50% wage inflation assumption (composed of a 2.50% price inflation assumption and a 1.00% additional general increase), and (ii) a service-related component as shown below:

Police/Fire Employees		
Years of Service	Service-Related Component	Total Increase
1	10.00%	13.50%
2	9.00	12.50
3	7.00	10.50
4	4.00	7.50
5	2.50	6.00
6	3.00	6.50
7	0.50	4.00
8	0.50	4.00
9 or more	0.00	3.50

Salary increases are assumed to occur once a year, on July 1. Therefore the pay used for the period year following the valuation date is equal to the reported pay for the prior year, increased by the salary increase assumption. For employees with less than one year of service, the reported rate of pay is used rather than the fiscal year salary paid.

Actuarial Methods and Assumptions (Continued)

3. **Mortality**

    A. Post-retirement mortality:

        a. Male employees: Male employees: PUB(10) Median Table for Retired Males by Occupation, loaded by 115%, projected with Scale MP2021 with immediate convergence.

        b. Female employees: PUB(10) Median Table for Retired Females by Occupation, loaded by 111%, projected with Scale MP2021 with immediate convergence.

        c. Disabled males – PUB(10) Tables for Disabled Males by Occupation for males, loaded by 115%, projected with Scale MP2021 with immediate convergence.

        d. Disabled females – PUB(10) Tables for Disabled Females by Occupation for females, loaded by 111%, projected with Scale MP2021 with immediate convergence.

    B. Pre-retirement mortality (combined ordinary and duty):

        a. Male employees: PUB(10) Tables for Employees by Occupation for males, projected with Scale MP2021 with immediate convergence.

        b. Female employees: PUB(10) Tables for Employees by Occupation for females, projected with Scale MP2021 with immediate convergence.

Actuarial Methods and Assumptions (Continued)

4. **Disability**

Sample rates per 1,000 active members are shown below. Ordinary disability rates are not applied to members eligible for retirement.

Age	Number of Disabilities per 1,000	
	Ordinary, Males and Females	Accidental, Males and Females
25	0.26	1.36
30	0.33	1.76
35	0.44	2.32
40	0.66	3.52
45	1.08	5.76
50	1.82	9.68
55	1.82	9.68
60	1.82	9.68
65	1.82	9.68

5.Termination:

Termination rates (for causes other than death, disability, or retirement) are a function of the member's service. Termination rates are not applied to members eligible for retirement. Rates are shown below:

Service	Termination Rate	Service	Termination Rate
1	0.100000	11	0.016586
2	0.055650	12	0.014969
3	0.043890	13	0.013493
4	0.037012	14	0.012135
5	0.032131	15	0.010878
6	0.028346	16	0.009708
7	0.025253	17	0.008613
8	0.022637	18	0.007584
9	0.020372	19	0.006615
10	0.018374	20+	0.000000

Actuarial Methods and Assumptions (Continued)

6. ***Retirement***

Rates of retirement are based on an employee's length of service, as follows:

Retirement Election for Police II Members		
Service	Tier I	Tier II
20	12%	
21	10%	
22	10%	
23	10%	
24	12%	
25	14%	15%
26	16%	5%
27	18%	5%
28	20%	5%
29	20%	5%
30	35%	33%
31	35%	5%
32	35%	5%
33	35%	5%
34	35%	5%
35+	100%	100%

7. ***Benefit and Compensation Limits***

Benefit limits under Section 415 and compensation limits under Section 401(a)(17) of the Internal Revenue Code are assumed to have no impact on benefits earned under this plan.

8. ***Marriage / Dependents***

80% of active employees are assumed to be married at retirement or death, with two children ages 11 and 13. Wives are assumed to be three years younger than their husbands. No remarriage is assumed.

9. ***Service Purchase***

None assumed.

10. ***Administrative and Investment Expenses***

None. The 6.90% investment return assumption represents the assumed return net of all investment expenses. Administrative expenses are assumed to be equal to the actual administrative expenses from the previous fiscal year.

TABLE 9
Outline of Principal Plan Provisions

1. **Effective Dates:**

    a. Original Plan   February 1, 1971.

    b. Most Recent Amendment   July 1, 1991.

2. **Eligibility:**   All permanent members of the police department appointed on or after February 1, 1971.

3. **Tier:**   Members who hire by June 30, 2012 are in <u>Tier I</u>, while members who join later are in <u>Tier II</u>.

4. **Final Average Salary(FAC):** <u>Tier I</u>: Salary received in the highest year of creditable service.
    <u>Tier II</u>: Average of the salaries received in the last three years of creditable service.
    For pension purposes, annual salary includes regular, holiday, and longevity pay.

5. **Retirement:**

    a. Eligibility   <u>Tier I</u>: Members who have completed 20 years of service may retire.
    <u>Tier II</u>: Members attain age 50 or older and with at least 25 years of service may retire.

    b. Benefit Formula   <u>Tier I</u>: The annual benefit at retirement is equal to 50% of annual salary at retirement, plus 2% of annual salary for each year of service between 20 and 25, plus 3% of annual salary for each year of service between 25 and 30.
    <u>Tier II</u>: 2% of FAC times years of service.

    c. Maximum Benefit   <u>Tier I</u>: 75% of FAC.
    <u>Tier II</u>: 70% of FAC.

    d. Commencement Date   Retirement benefits commence as of the first payroll period after retirement.

    e. Form of Payment   The annual benefit calculated in accordance with the formula in (b) above is payable semi-monthly for the remainder of the retired member's life, with 67.5% of the member's benefit payable for the lifetime of his surviving spouse.

6. **Vested Termination:**

    a. Eligibility   Upon termination of employment after 10 years of service a member is eligible for a benefit deferred to retirement age.

b. Benefit Formula   2.5% of annual salary multiplied by full years of service at termination

c. Commencement Date   Benefits commence as of normal retirement age.

d. Form of Payment   Same as retirement.

7. _Disability Retirement:_

a. Eligibility   A member who is unable to perform active duty as a result of disability which the Board of Public Safety finds to be permanently incapacitating is eligible to receive disability retirement benefits.

b. Benefit Formula   <u>Service Related</u> For <u>Tier I</u> members, the benefit would be equal to 66-2/3% of highest annual salary, reduced for each dollar of earned income in excess of the salary the member would earn as an active employee, to a minimum of 50% of salary. For <u>Tier II</u> members, the benefit would initially be the same, but once the member reached 25 years of service, including service while disabled, the benefit would be converted to a regular retirement benefit. (The age 50 minimum for retirement would not apply to this benefit.)

<u>Non-Service Related</u> 50% of highest annual salary.

c. Commencement Date   Benefits commence as of the first payroll period after disability.

d. Form of Payment   Same as retirement.

8. _Non-vested Termination of Employment:_   A member who leaves employment prior to completing 10 years of service will receive a lump sum payment of his accumulated contributions without interest.

9. *Death Before Retirement -- Survivor Annuity Benefits*

    a. Eligibility   Death while actively employed.

    b. Benefit Formula

        (1) Surviving spouse   <u>Service Related</u>. The annual benefit is 50% of the deceased member's highest annual salary, payable to the surviving spouse until death or earlier remarriage.

                                        <u>Non-Service Related</u>. 30% of the deceased member's highest annual salary, payable to the surviving spouse until death or earlier remarriage.

        (2) Surviving children   10% of the deceased member's highest annual salary, payable to each surviving child until his 18th birthday (or for life if such child becomes permanently disabled prior to the member's death).

        (3) Maximum family death benefit   <u>Service Related</u>. 75% of deceased's highest annual salary.

                                        <u>Non-Service Related</u>. 50% of deceased's highest annual salary.

    c. Commencement Date   Benefits commence as of the first payroll period after death.

    d. Form of Payment   Surviving spouse's and children's benefits are payable semi-monthly.

10. *Death Before Retirement -- Lump Sum Refund of Contributions*   A lump sum payment equal to the member's accumulated contributions without interest shall be paid to the estate of any active member who dies with no surviving spouse or children.

11. *Retiree Cost-of-Living Increases*   <u>Tier I</u>: All benefits in pay status are increased by 3% annually.
<u>Tier II</u>: All benefits in pay status are increased by 75% of CPI, annual cap of 3%.

12.	*Service Purchase*	For <u>Tier I</u> member, an active employee eligible to retire who has served in the U.S. armed forces may "purchase" additional years of service up to his number of years of military service, but no more than four years. A member may also purchase up to four years of prior civilian employment time with the City of Warwick. Either purchase would require the employee to contribute to the fund, at retirement, an additional year's contribution (at the then current contribution percentage) for each year of service purchased. However, the right to buy municipal service would be eliminated for <u>Tier II</u> members.
13.	*Employee Contributions*	Members contribute a percentage of their covered earnings (regular, holiday, and longevity) equal to one third of the actuarially determined contribution rate.

TABLE 10
Risks Associated with Measuring the Accrued Liability and
Actuarially Determined Contribution

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. Investment risk – actual investment returns may differ from the expected returns;
2. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
3. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
4. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
5. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The computed contribution may be considered as a minimum contribution rate that complies with the funding policy. The timely receipt of the actuarially determined contributions is critical to

support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

PLAN MATURITY MEASURES

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures include the following:

	June 30, 2023	June 30, 2022	June 30, 2021	June 30, 2020	June 30, 2019*
Ratio of the market value of assets to total payroll	15.7	15.1	19.3	14.9	15.8
Ratio of actuarial accrued laibility to payroll	19.9	20.3	21.0	19.7	19.1
Ratio of actives to retirees and beneficiaries	0.7	0.7	0.7	0.8	0.8
Ratio of net cash flows to market value of assets	-2.5%	-2.9%	-1.9%	-2.1%	-2.0%
Duration of the actuarial accrued liability	15.2	15.4	15.5	15.6	15.3

*Risk measures on June 30, 2019 have bene revised based on the restated finromation.

RATIO OF MARKET VALUE OF ASSETS TO PAYROLL

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 4.0 times the payroll, a return on assets 5% different than assumed would equal 20% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

RATIO OF ACTUARIAL ACCRUED LIABILITY TO PAYROLL

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 5.5 times the payroll, a change in liability 2% other than assumed would equal 11% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

RATIO OF ACTIVES TO RETIREES AND BENEFICIARIES

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

RATIO OF NET CASH FLOW TO MARKET VALUE OF ASSETS

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

DURATION OF PRESENT VALUE OF BENEFITS

The duration of the present value of benefits (PVB) may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, duration of 10 indicates that the PVB would increase approximately 10% if the assumed rate of return were lowered 1%.

ADDITIONAL RISK ASSESSMENT

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability. These types of other assessments are provided to the Board in the annual presentation.

Low-Default-Risk Obligation Measure

Actuarial Standards of Practice No. 4 (ASOP No. 4) was revised and reissued in December 2021 by the Actuarial Standards Board (ASB). It includes a new calculation called a low-default-risk obligation measure (LDROM) to be prepared and issued annually for defined benefit pension plans. The transmittal memorandum for ASOP No. 4 includes the following explanation:

> *"The ASB believes that the calculation and disclosure of this measure provides appropriate, useful information for the intended user regarding the funded status of a pension plan. The calculation and disclosure of this additional measure is not intended to suggest that this is the "right" liability measure for a pension plan. However, the ASB does believe that this additional disclosure provides a more complete assessment of a plan's funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date."*

The LDROM estimates the amount of money the plan would need to invest in low risk securities to provide the benefits with greater certainty. The current model expects lower costs but with higher risk, which creates less certainty and a possibility of higher costs. The LDROM model creates higher expected costs but more predictability when compared to the current model. Thus, the difference between the two measures (Valuation and LDROM) is one illustration of the possible costs the sponsor could incur if there was a reduction in the investment risk in comparison to the current diversified portfolio. However, the downside risk would be limited in the scenarios where the current portfolio would fail to achieve returns in excess of the low-default-risk discount, in this case 4.90%.

The following information has been prepared in compliance with this new requirement. Unless otherwise noted, the measurement date, actuarial cost methods, and assumptions used are the same as for the funding valuation covered in this actuarial valuation report.

LDROM measure of benefits earned as of the measurement date: $399 million
Valuation liability (IEAN) at 6.9% on measurement date: 304 million
Cost to mitigate investment risk in the System's portfolio: $ 95 million

ASOP 4 requires commentary to help the intended user understand the significance of the LDROM with respect to the funded status of the plan, plan contributions, and the security of participant benefits. Specifically, if plan assets were changed to be invested exclusively in low-default-risk securities, the funded status would be lower and the contributions would have to immediately be higher. While investing in a portfolio with low-default-risk securities may be more likely to reduce the standard deviation of investment volatility, the higher necessary contributions would produce a larger ratio of assets to payroll, and thus it is not self-evident that the volatility of the employer contributions would be any lower. In addition, the portfolio would be expected to generate less investment earnings over time, thus it also would be more likely to result in higher employer contributions and/or lower benefits.

Disclosures: Discount rate used to calculate LDROM: 4.90% Intermediate FTSE Pension Discount Curve as of June 30, 2023. This measure is not appropriate for assessing the need for or amount of future contributions as the current portfolio is expected to generate significantly more investment earnings than the low-default-risk portfolio. This measure is also not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation as this measure includes projections of salary increases and the ability for current members to continue to accrue eligibility and vesting service.