

**THE GENERAL RETIREMENT SYSTEM OF
THE CITY OF DETROIT**

ANNUAL ACTUARIAL VALUATION OF COMPONENT II
JUNE 30, 2015



April 4, 2017

The Board of Trustees
The General Retirement System of the City of Detroit

Dear Board Members:

This report provides key results from the **Annual Actuarial Valuation** of the annuity and pension liabilities of the General Retirement System of the City of Detroit – Component II benefits. The date of the valuation was **June 30, 2015**.

The City of Detroit filed for bankruptcy on July 18, 2013. A final Plan of Adjustment (“POA”) was confirmed on November 7, 2014 and the official exit from bankruptcy was on December 10, 2014. In connection with the POA, very significant changes were made to the benefits that the General Retirement System provides and to the contributions that it will receive. In particular, the benefits provided by the Retirement System were divided into two separate plans, referred to as “Component I” and “Component II.” The benefits provided in each component are effective July 1, 2014 and are described in detail in Emergency Manager Order No. 44, dated December 8, 2014. In very general terms, Component I provides benefits for service rendered on and after July 1, 2014 and Component II provides benefits for service rendered prior to July 1, 2014.

This is the 2nd report issued covering Component II benefits. The results provided herein relate solely to the Component II benefits. Component I benefits will be the subject of a separate report. The purposes of the valuation are to measure the funding progress of Component II in accordance with the terms of the POA and to provide actuarially determined contribution amounts, given POA conditions and assumptions for Fiscal Year 2017 for Component II, for comparison with the contribution amounts provided in the POA. The results of the valuation are not applicable for other purposes. In particular, the information provided in this report is not suitable for financial reporting in connection with GASB Statement No. 67. Such information was provided in a separate report. Information regarding potential benefit restoration as allowed for in the POA will also be provided in a separate report at the Board’s request.

The contribution amounts on page 3 include stipulated POA contributions plus two illustrative contribution amounts from alternate funding policies. Users of this report should be aware that contributions made at these amounts do not guarantee benefit security.

This report was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board. Gabriel Roeder is not responsible for unauthorized use of this report.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as: plan experience differing from that anticipated by the economic and demographic assumptions; changes in economic or demographic assumptions; 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. Due to the limited scope of the actuary’s assignment, the actuary did not perform an analysis of the potential range of such future measurements.

The valuation was based upon records maintained and furnished by the Retirement System staff concerning active members, retirees and beneficiaries, and financial accounts as of the valuation date. Data was checked for year-to-year consistency, but was not audited by the actuary. We are not responsible for the completeness or accuracy of the data. Certain necessary data was not available in time to produce the results in this report and it was necessary for us to use approximations. Please see related discussion in the Comments section of this report.

Data supplied by Retirement System Staff was provided separately for Component I and Component II (and from different source information). Data was reconciled between the Component I and Component II data provided, with the help of System staff. However, a number of manual changes were required to be made by the actuary to create member data files that were consistent between Component I and Component II. In order to expedite processing of the valuation, we recommend staff reconciles this data prior to providing it for the next valuation.

The assumptions used in the valuations concerning future experience are summarized in Section D of this report. Except for the assumed rate of investment return, the actuarial assumptions used for the valuation are set by the Board based upon advice of the actuary and other parties. The assumed rate of investment return was set to 6.75% in the POA and is therefore a “prescribed assumption set by another party” as discussed in Actuarial Standard of Practice No. 4. In our judgement, all of the actuarial assumptions used for the valuation are reasonable for purposes of the measurement.

This report has been prepared by individuals who have substantial experience valuing public sector retirement systems. To the best of our knowledge, this report is complete and accurate and was made in accordance with Actuarial Standards of Practice promulgated by the Actuarial Standards Board.

The signing individuals are independent of the plan sponsor.

David T. Kausch and Judith A. Kermans are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.


This report does not evaluate the plan sponsor’s ability or willingness to make contributions to the Retirement System. Given the funded level of Component II, plan sponsor contributions are critical if further benefit reductions are to be avoided. Employer contributions set forth in the POA are expected to lead to a decrease in the funded status over the next 7 years (as contemplated by the POA); even if all assumptions are met.

This report replaces our draft dated August 22, 2016. No results have changed. This final report contains some clarifying language.

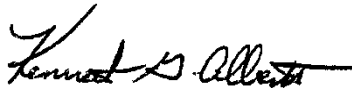
Respectfully submitted,



David T. Kausch, FSA, EA, FCA, MAAA



Judith A. Kermans, EA, FCA, MAAA



Kenneth G. Alberts

DTK:sc

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SECTION A
VALUATION RESULTS

VALUATION RESULTS

The expected contributions for fiscal year 2015 and beyond are provided in the POA. Subsequent to the POA, the DIA has entered into an agreement to pay part of its contribution requirement to the General Plan in a single lump sum payment. A revised contribution schedule (from Retirement System staff) showing actual fiscal year 2016 contributions as well as the DIAs future contribution requirements is shown below.

Contribution Source#
(\$ millions)

Fiscal Year	For DWSD Liabilities		For Other Liabilities					Total
	DWSD Transfers	Transfers from DWSD	UTGO	State*	DIA	Other	Transfers from DWSD	
2016	\$ 45.4	\$ (2.5)	\$ 4.0	\$ -	\$ 32.9	\$ 22.5	\$ 2.5	\$ 104.8
2017	45.4	(2.5)	4.0	-	0.4	22.5	2.5	72.3
2018	45.4	(2.5)	3.9	-	0.4	22.5	2.5	72.2
2019	45.4	(2.5)	3.7	-	0.4	22.5	2.5	72.0
2020	45.4	(2.5)	3.7	-	0.4	2.5	2.5	52.0
2021	45.4	(2.5)	3.6	-	0.4	2.5	2.5	51.9
2022	45.4	(2.5)	2.3	-	0.4	2.5	2.5	50.6
2023	45.4	(2.5)	2.0	-	0.4	2.5	2.5	50.3

* The State’s scheduled contributions ended in 2015.

Subsequent to the issuance of the Draft valuation report, certain contributions reflected in this schedule were accelerated. The accelerated schedule will be reflected in the next valuation report.

We have assumed the contributions outlined above will not change. Further, it was assumed that all contributions will be made to the System by the City, regardless of the source. For example, it was assumed that the UTGO paid the City \$4 million in 2016 and the City contributed \$4 million to the Retirement System. An estimate of the probability of those payments being made was outside the scope of this project, not required by Actuarial Standards and, therefore, was not made.

In order to develop actuarial contribution rates in accordance with POA provisions and assumptions, we were instructed to allocate the above contributions to the various divisions. This was done by allocating DWSD transfer amounts to the General City division and remaining DWSD contributions to the DWSD division; allocating \$2.5 million per year to the Library; and allocating remaining contributions to DOT and General in proportion to their unfunded liabilities. The chart below shows this allocation.

	General	D.O.T.	Subtotal	Library	DWSD	Totals
	\$ Thousands					
Unfunded Liabilities	\$ 507,917	\$ 183,193	\$ 691,110	\$ 19,434	\$ 297,292	\$ 1,007,836
% of Subtotal	73.5%	26.5%	100.0%	N/A	N/A	
FY 2016 Contributions	\$ 41,812	\$ 15,081	\$ 56,893	\$ 2,500	\$ 45,400	\$ 104,793
Transfers	\$ 2,500	\$ -	\$ 2,500	\$ -	\$ (2,500)	\$ -
FY 2016 UAL Contributions	\$ 44,312	\$ 15,081	\$ 59,393	\$ 2,500	\$ 42,900	\$ 104,793

A different allocation procedure would produce different results. If a different allocation procedure should be used, please let us know and we will revise this report.

VALUATION RESULTS (CONTINUED)

Unfunded Actuarial Accrued Liability⁺

	(\$ millions)				
	General City	D.O.T.	DWSD	Library	System Total
UAAL* as of June 30, 2015	\$ 507.9	\$ 183.2	\$ 297.3	\$ 19.4	\$ 1,007.8
Anticipated POA Contribution (EOY)	44.3	15.1	42.9	2.5	104.8
Anticipated Expenses@	-	-	-	-	-
Interest at 6.75%	34.3	12.4	20.1	1.3	68.0
Projected UAAL* as of June 30, 2016	\$ 497.9	\$ 180.5	\$ 274.5	\$ 18.2	\$ 971.1
Anticipated POA Contributions for FY2017	20.4	6.5	42.9	2.5	72.3
Estimated Employer Contributions for FY 2024 #!	\$ 68.6	\$ 25.6	\$ 6.6	\$ 0.7	\$ 101.5

Totals may not add due to rounding.

* Unfunded Actuarial Accrued Liability.

@ In accordance with Plan Document, the mandated 6.75% rate of return is net of investment and administrative expenses.

Assuming the POA contributions through 2023 and a 30-year level principal closed amortization thereafter. When determining the Fiscal Year 2024 illustrative amounts, only the total contributions and the DWSD contributions are stipulated in the POA. The remaining amounts were allocated to the other groups as described on page 1. A different allocation would result in different results by group.

+ Because no service is being accrued in Component II, no normal cost contribution is needed.

! Total employer contributions, including amounts paid by employer but funded from other sources as required by POA.

The POA contributions result in a defunding of the plan between now and June 30, 2023, which was contemplated by the POA. In fact, the anticipated POA contributions do not project benefit restoration even if all assumptions are met (including the POA mandated assumed rate of return of 6.75%). Also, the 2017 to 2019 contributions only marginally exceed the amount of nominal interest that accrues on the UAAL. The Estimated Employer Contribution for FY 2024 is based on a projection of results assuming only the POA contributions are made and all future experience between the valuation date and FY 2024 is as assumed. Actual experience will result in changes to this estimate and the final result (from the June 30, 2023 actuarial valuation) could be materially different than shown above.

Contributions expected to be paid in FY 2016 include the lump sum payment of the majority of the DIA's obligation under the POA (see updated schedule of POA contributions on prior page). The lump sum also includes the present value of an amount due in FY 2024 from the DIA, resulting in a decrease in the FY 2024 contribution estimate of \$0.4 million.

We understand the City has set aside additional money to be contributed to one of the pension plans in the future. This money has not been taken into account in this valuation.

VALUATION RESULTS (CONTINUED)

At the request of the Board, in addition to the status valuation calculations on page 2, we illustrate what the funding requirements would be if the FY 2016 contributions were determined by an actuarial valuation.

In the chart below, we illustrate two alternate funding policies for FY 2017. The first policy is an illustration of funding the UAAL over the expected remaining active service life of this group. The second policy is similar to the Board's existing (pre-bankruptcy) policy, but modified to prevent insolvency (based on Plan assumptions) prior to the end of the funding period. The illustrations are intended to show that there are a broad range of possible policies, but are not intended to show a specific recommendation or a minimum (or maximum) level of contributions.

Funding Policy 1 is based on amortizing the UAAL over the average remaining service life of active members (7 years for DOT; 8 years for all other groups) using level dollar amortization.

Funding Policy 2 is based on amortizing the UAAL with level principal payments over a closed 30-year period plus interest. This method is also known as level principal declining interest amortization.

Illustrative Contribution Shortfall

	(\$ millions)				
	General City	D.O.T.	DWSD	Library	System Total
(1) Illustrative Contribution for FY 2017 (Funding Policy 1)	\$ 82.6	\$ 33.2	\$ 45.5	\$ 3.0	\$ 164.3
(2) Illustrative Contribution for FY 2017 (Funding Policy 2)	50.2	18.2	27.7	1.8	97.9
(3) Actual Contributions for FY 2017 (POA)	20.4	6.5	42.9	2.5	72.3
Fiscal Year 2017 Shortfall - Funding Policy 1: (1) - (3)	\$ 62.2	\$ 26.7	\$ 2.6	\$ 0.5	\$ 92.0
Fiscal Year 2017 Shortfall - Funding Policy 2: (2) - (3)	\$ 29.8	\$ 11.7	\$ (15.2)	\$ (0.7)	\$ 25.6

Recommendation: We recommend that additional contributions be made to the Component II Plan. While contributions made at levels under Funding Policy I or 2 do not guarantee benefit security of Plan members, increasing contributions would potentially increase the benefit security of Plan members.

VALUATION RESULTS (CONTINUED)

Present Value	June 30, 2015	June 30, 2014
Accrued Pension Liabilities (Employer Financed)		
Retirees and beneficiaries	\$2,165,637,549	\$2,249,960,085
Inactive members future deferred pensions	224,941,943	221,148,836
Active members	447,834,724	461,525,862
Total accrued pensions	2,838,414,216	2,932,634,783
Pension fund balances	1,922,588,277	1,649,943,355
Unfunded accrued pension liabilities	\$915,825,939	\$1,282,691,428
Accrued Annuity Liabilities (Member Financed)		
Retirees and beneficiaries Future annuities	\$ 114,892,726	\$ 115,773,089
Member annuities & future refunds	185,807,742	267,783,724
Total accrued annuity liabilities	300,700,468	383,556,813
Annuity fund balances	208,689,931	365,264,524
Unfunded accrued annuity liabilities	\$ 92,010,537	\$ 18,292,289
Annuity Claw-back Liability Reductions		
Retirees and beneficiaries	\$ 0	\$ (80,190,596)
Inactive members	0	(3,585)
Active members	0	(13,645,339)
Total Reductions	\$ 0	\$ (93,839,520)
Totals		
Actuarial Accrued Liabilities	\$ 3,139,114,684	\$3,222,352,076
Accrued Assets	2,131,278,208	2,015,207,879
Unfunded Actuarial Accrued Liabilities	\$1,007,836,476	\$1,207,144,197

VALUATION RESULTS (CONCLUDED)

FUNDED RATIO - POA

	Defined Benefit	ASF	Total
A Actuarial Accrued Liability	\$2,953,306,942	\$185,807,742	\$3,139,114,684
B Market Value of Assets	\$1,945,470,466	\$185,807,742	\$2,131,278,208
C Unfunded Actuarial Accrued Liability (A-B)	\$1,007,836,476	\$ 0	\$1,007,836,476
D Funded Ratio (B/A)	65.9%	100.0%	67.9%

The POA Liability amount above is an expected return-based measurement of the pension obligation. It is based upon the mandated 6.75% interest rate assumption (assumption prescribed by another party). It estimates an amount that will be sufficient to provide benefits if the portfolio earns the expected 6.75% return on assets and all other assumptions are met. This measure is appropriate for assessing the need for or amount of future contributions (if all assumptions are met). This measure is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation, in other words, of transferring the obligation to a third party in a market value type transaction.

FUNDED RATIO - SOLVENCY

	Defined Benefit	ASF	Total
A Market-Based Liability	\$4,015,789,679	\$185,807,742	\$4,201,597,421
B Market Value of Assets	\$1,945,470,466	\$185,807,742	\$2,131,278,208
C Unfunded Actuarial Accrued Liability (A-B)	\$2,070,319,213	\$ 0	\$2,070,319,213
D Funded Ratio (B/A)	48.4%	100.0%	50.7%

The Solvency value is a market-based measurement of the pension obligation. It estimates the amount the plan would need to invest in low risk securities to provide the benefits with greater certainty. For this purpose, the solvency liability is computed at 3.80% as of June 30, 2015, based on the long-term municipal bond rate ("State & local bonds" rate from Federal Reserve statistical release (H.15) as of June 25, 2015). We are not able to assess the credit quality of the plan sponsor and, as such, no adjustment has been made for the credit quality of the plan sponsor. This measure may not be appropriate for assessing the need for or amount of future contributions. This measure may not be appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation.

The difference between the two measures illustrates the savings the sponsor anticipates by taking on the risk in a diversified portfolio.

COMMENTS

Experience

Experience was more favorable than assumed during the year ending June 30, 2015. The chart below shows the estimated gain by division.

Development of Actuarial Gain/(Loss)

	(\$ millions)				
	General City	D.O.T.	DWSD	Library	System Total
(1) UAAL as of June 30, 2014	\$ 610.2	\$ 217.1	\$ 352.4	\$ 27.4	\$ 1,207.1
(2) Actual POA Contribution (EOY)	118.2	25.3	42.9	2.9	189.3
(3) Interest at 6.75%	41.2	14.7	23.8	1.9	81.5
(4) Projected UAAL* as of June 30, 2015	\$ 533.2	\$ 206.5	\$ 333.3	\$ 26.4	\$ 1,099.3
(5) Actual UAAL* as of June 30, 2015	507.9	183.2	297.3	19.4	1,007.8
Gain (Loss): (4) - (5)	\$ 25.3	\$ 23.3	\$ 36.0	\$ 6.9	\$ 91.5

* *Unfunded actuarial accrued liability.*

The main sources of gains and losses were (in descending order of magnitude):

- Revisions in the value of the ASF clawback: Gain
- Retiree Data (including removal of a COLA reported in the June 30, 2014 data): Gain
- Investment Return: Loss
- Refund of pre-paid fees: Gain
- Active data, including newly reported members: Loss

Demographic (census) experience was, in total, close to assumed. There was a mortality gain that was offset by losses related to retirement, disability, and vested terminations experience.

The estimated FY 2024 contributions are very sensitive to changes in year-to-year experience. The chart below reconciles our estimate from the June 30, 2014 valuation to our estimate from this valuation (June 30, 2015).

Reconciliation of Projected June 30, 2024 Contributions

	(\$ millions)				
	General City	D.O.T.	DWSD	Library	System Total*
Estimated FY 2024 Employer Contribution from 6/30/14 Valuation	\$ 73.4	\$ 28.1	\$ 12.7	\$ 3.6	\$ 117.8
FY 2024 DIA Amount Prepaid	(0.3)	(0.1)	-	-	(0.4)
Other FY 16 Contributions Above Expected	-	-	-	-	-
Reallocation of Library Contributions	1.2	0.6	-	(1.8)	-
Experience Gain of \$91.5 Million	(4.3)	(4.0)	(6.1)	(1.2)	(15.6)
Actual FY 15 Contribution above Expected	(1.4)	1.0	-	0.2	(0.2)
Estimated FY 2024 Employer Contribution from 6/30/15 Valuation	\$ 68.6	\$ 25.6	\$ 6.6	\$ 0.7	\$ 101.5

*Totals may not add due to rounding.

COMMENTS (CONTINUED)

ASF Clawback Data

ASF clawback data reported for the June 30, 2014 valuation resulted in an estimated reduction in pension liabilities of approximately \$110 million. For the June 30, 2015 valuation, the values of the clawbacks were included in the assets as either deposits or receivables. We understand that the amounts included in the assets were determined by the System's auditors in accordance with GAAP accounting. We, therefore, made no adjustment to the June 30, 2015 liabilities for the ASF clawback. This change in data method resulted in a reduction in the UAAL of approximately \$74 million.

ASF Interest Credits

The ASF fund cannot be credited with more than 5.25% (or the total fund earnings if less). We understand that any future arbitrage that may result will be transferred to Component I assets (to the extent needed for funding Transition Liabilities) and, therefore, we did not model any arbitrage as part of this valuation. The estimated present value of future transfers may be modelled at the Board's request. Any adjustment to the Component II liability would be equally offset by a receivable Component I asset.

Data Issues and Approximations

The data provided for this valuation did not reflect the plan freeze or the various cuts to active member benefits that were instituted in connection with the POA. Consequently, it was necessary for us to use approximations to estimate the frozen accrued benefits. While in our judgement the approximations are reasonable, an estimate of the potential range of error in those approximations could not be performed without considerable additional work and, therefore, was outside the scope of this study. It is important that complete data be provided as soon as possible to minimize the probability of an important decision being made based upon wrong information. We would be pleased to redo this valuation with revised data if such can be made available. For active members, AFC amounts and total service as of June 30, 2015 were reported. For purposes of this valuation, we matched the June 30, 2015 actives to the active data reported for June 30, 2014 to obtain the AFC and benefit service amounts as of June 30, 2014.

Actuarial Assumptions

The System routinely has five-year experience studies in accordance with the ordinance. The last scheduled experience study for the period from July 1, 2007 through June 30, 2012 was postponed due to the bankruptcy. Moreover, since the uncertainty at the City during the bankruptcy may have led to member behavior that was not representative of long-term trends, we conducted a review of the mortality assumption only in 2013. We recommend that the System return to its prior periodic schedule for the next experience study for the period from July 1, 2012 through June 30, 2017. Alternatively, in order to avoid distortions from the bankruptcy, the next experience study could be scheduled to begin after the city emerged from bankruptcy such as July 1, 2015 through June 30, 2020.

COMMENTS (CONCLUDED)

Restoration

This valuation assumes no future restoration of Component II benefits (consistent with the expectation of the POA). Any future restoration will be reflected beginning in the next valuation after being granted.

DWSD (Water/Sewer) Projections

Based on this valuation, the DWSD (Water/Sewer) division is not expected to be fully funded by 2024. As a result, their contributions will continue in FY 2024 (see page 2 for estimated FY 2024 contributions).

Future Results

While FY 2016 investment performance has not yet been provided to us, the S&P 500 and the DOW both returned less than 3% for the year. If the Retirement System's experience is similar, this will result in downward pressure on the funded status and upward pressure on the FY 2024 contribution requirements (above what is shown in this report).

The POA mandated contributions for FY 2017 and beyond are expected to defund the Retirement System, even if all assumptions are realized. In FY 2017, the POA mandated contributions marginally exceed interest on the projected UAAL. This defunding was contemplated in the POA.

Recommendation 1

We recommend that every potential action be taken to generate contributions to the Retirement System above and beyond those provided in the POA.

Recommendation 2

We recommend that a study be undertaken to develop a funding policy for FY 2024 and beyond. The increase in contributions that is expected at that time is so significant that it cannot be ignored until then (even though this is contemplated in the POA). All stakeholders should agree on the funding method well before that date comes. If not, there could be a significant risk of contribution defaults and/or benefit insecurity.

Recommendation 3

We recommend that the System compute frozen accrued benefits as soon as possible and report them to the Actuary for the June 30, 2016 valuation. If important decisions are to be made based on this valuation, we recommend further that the valuation be redone based upon actual computed frozen accrued benefits.

Conclusion

The POA contributions fall short of contributions that would result from either of the funding policies illustrated in this report. Given those contributions, and the fact that FY 2016 will likely show an investment loss, the funding status is expected to decline in the next valuation. The FY 2024 contribution is expected to be very high compared to City contributions in the immediately preceding years. Planning for the FY 2024 contribution level is very important.

LIABILITY BY DIVISION - POA

(\$Thousands)					
	General	D.O.T.	DWSD	Library	Totals
Accrued Pension Liabilities					
Retirees and beneficiaries	\$1,226,354	\$298,321	\$581,576	\$ 59,386	\$2,165,637
Inactive members future deferred pensions	142,781	29,471	47,792	4,897	224,941
Active members	211,814	72,324	135,849	27,847	447,834
Total accrued pension liabilities	1,580,949	400,116	765,217	92,130	2,838,412
Pension fund balances	1,126,320	224,402	495,832	76,034	1,922,588
Unfunded accrued pension liabilities	454,629	175,714	269,385	16,096	915,824
Accrued Annuity Liabilities					
Retirees and beneficiaries	64,367	10,770	35,905	3,850	114,892
Members annuities & future refunds	80,277	40,311	56,407	8,812	185,807
Total accrued annuity liabilities	144,644	51,081	92,312	12,662	300,699
Annuity fund balances	91,357	43,602	64,406	9,325	208,690
Unfunded accrued annuity liabilities	53,287	7,479	27,906	3,337	92,009
Totals					
Actuarial Accrued Liabilities	1,725,593	451,197	857,529	104,792	3,139,111
Accrued Assets	1,217,677	268,004	560,238	85,359	2,131,278
Funded Ratio	70.6%	59.4%	65.3%	81.5%	67.9%
Unfunded Actuarial Accrued Liabilities	\$ 507,916	\$183,193	\$297,291	\$ 19,433	\$1,007,833

Totals may be off slightly due to rounding.

SECTION B
FUND ASSETS

STATEMENT OF PLAN ASSETS
(REPORTED ASSETS AT MARKET VALUE)

Market Value - June 30, 2015	
Cash & Equivalents	\$ 8,062,041
Short-Term Investments	123,689,645
Restricted Investments	32,500,000
Mortgage Securities	21,673,758
Other Securities	78,104,960
Receivables & Accruals	136,431,533
Stocks	933,910,863
Bonds & Government Securities	149,519,378
Real Estate	237,948,384
Private Equity	314,454,028
Mortgages	98,223,231
Securities Lending	96,518,699
Pooled Investments	6,953,000
Capital Assets	1,330,740
Accounts payable	(108,918,913)
Balancing Item	876,861
Total Current Assets	\$ 2,131,278,208

MARKET VALUE OF ASSETS

Reserve Accounts (Market Value)

Funds	Fund Balances	
	June 30, 2015	June 30, 2014
Annuity Savings	\$ 185,807,742	\$ 267,783,724
Annuity Reserve	22,882,189	97,480,800
Pension Accumulation	(88,967,115)	(1,613,518,388)
Pension Reserve	2,011,555,392	2,349,780,743
Accrued Liability Fund Reserve	0	913,681,000
Total Fund Balances	\$ 2,131,278,208	\$2,015,207,879

Revenues and Expenditures (Market Value)

	Pension Funds	Annuity Funds	Total Funds
Market Value July 1, 2014	\$1,649,943,355	\$365,264,524	\$2,015,207,879
Revenues			
Member Contributions	0	609,073	609,073
Employer Contributions	81,062,684	0	81,062,684
DIA Contributions	5,000,000	0	5,000,000
State of Michigan Contributions	98,800,000	0	98,800,000
UTGO Contributions	4,419,410	0	4,419,410
ASF Recoupment Clawed Back	55,457,513	(55,457,513)	0
Other ASF Recoupment	132,529,996	0	132,529,996
Investment Income (Net)	80,735,692	12,319,286	93,054,978
Other	5,690,000	0	5,690,000
Transfers	58,858,267	(58,858,267)	0
Total	\$ 522,553,562	\$ (101,387,421)	\$ 421,166,141
Expenditures			
Benefit Payments	242,351,819	10,866,130	253,217,949
Refund of Member Contributions	0	44,321,041	44,321,041
Expenses	7,556,822	0	7,556,822
Total	\$ 249,908,641	\$ 55,187,171	\$ 305,095,812
Market Value June 30, 2015	\$1,922,588,276	\$208,689,932	\$2,131,278,208
Market Value Rate of Return (Net of all expenses)	4.2%	4.4%	4.2%

Rates of return are dollar weighted estimates assuming mid-year cash flows.

**ALLOCATION OF ASSETS USED FOR VALUATION
BY RESERVE ACCOUNT AND DIVISION**

	June 30, 2015
Annuity Savings Fund	
General	\$ 80,277,285
D.O.T.	40,310,783
DWSD	56,407,348
Library	8,812,326
Totals	185,807,742
Annuity Reserve Fund	
General	11,080,145
D.O.T.	3,291,341
DWSD	7,998,367
Library	512,336
Totals	22,882,189
Pension Accumulation Fund	
General	(19,808,387)
D.O.T.	(47,832,793)
DWSD	(41,886,578)
Library	20,560,643
Totals	(88,967,115)
Pension Reserve Fund	
General	1,146,128,325
D.O.T.	272,234,595
DWSD	537,718,866
Library	55,473,606
Totals	2,011,555,392
Accrued Liability Fund	
General	0
D.O.T.	0
DWSD	0
Library	0
Totals	0
Retirement System Totals	\$2,131,278,208

SECTION C
PARTICIPANT DATA

SUMMARY OF MEMBER DATA
JUNE 30, 2015

Active Members

	General	D.O.T.	DWSD	Library	Totals
Number	2,371	781	1,244	292	4,688
% Change in active members	2.0 %	(3.9)%	(13.0)%	(7.0)%	(4.0)%
Annual payroll (\$ millions)	\$ 102.7	\$ 28.1	\$ 57.8	\$ 12.1	\$ 200.7
Average pay	\$43,299	\$36,033	\$46,441	\$41,593	\$42,816
% Change in average pay	0.0 %	0.4 %	9.3 %	0.9 %	2.7 %

Retired Members and Survivor Beneficiaries

	General	D.O.T.	DWSD	Library	Totals
Number	7,291	1,661	2,614	318	11,884
Annual benefits (\$ millions) #	\$ 137.1	\$ 31.3	\$ 61.0	\$ 7.0	\$ 236.4
Average benefits #	\$18,800	\$18,872	\$23,335	\$21,892	\$19,890
% Change in reported average benefit	(5.7)%	(5.6)%	(6.1)%	(6.0)%	(5.7)%
% Change in calculated average benefit #	(1.3)%	(1.2)%	(1.6)%	(1.5)%	(1.3)%

Includes Annuities. Does not include reductions resulting from the annuity claw-backs.

Inactive Vested Members

	General	D.O.T.	DWSD	Library	Totals
Number	1,735	355	567	75	2,732
Average FAC	40,369	41,634	42,249	32,070	40,696
Average service	15.8	15.6	15.5	14.7	15.7
Annual benefits (\$ millions)	\$ 18.2	\$ 3.7	\$ 6.1	\$ 0.6	\$ 28.6
Average benefits	\$10,505	\$10,475	\$10,733	\$7,858	\$10,476
% Change in average service	0.6 %	(0.2)%	1.6 %	(0.8)%	0.6 %
% Change in average FAC	0.6 %	0.7 %	1.2 %	6.5 %	0.9 %

ACTIVE MEMBERS AS OF JUNE 30, 2015
BY ATTAINED AGE AND YEARS OF SERVICE
RETIREMENT SYSTEM TOTALS

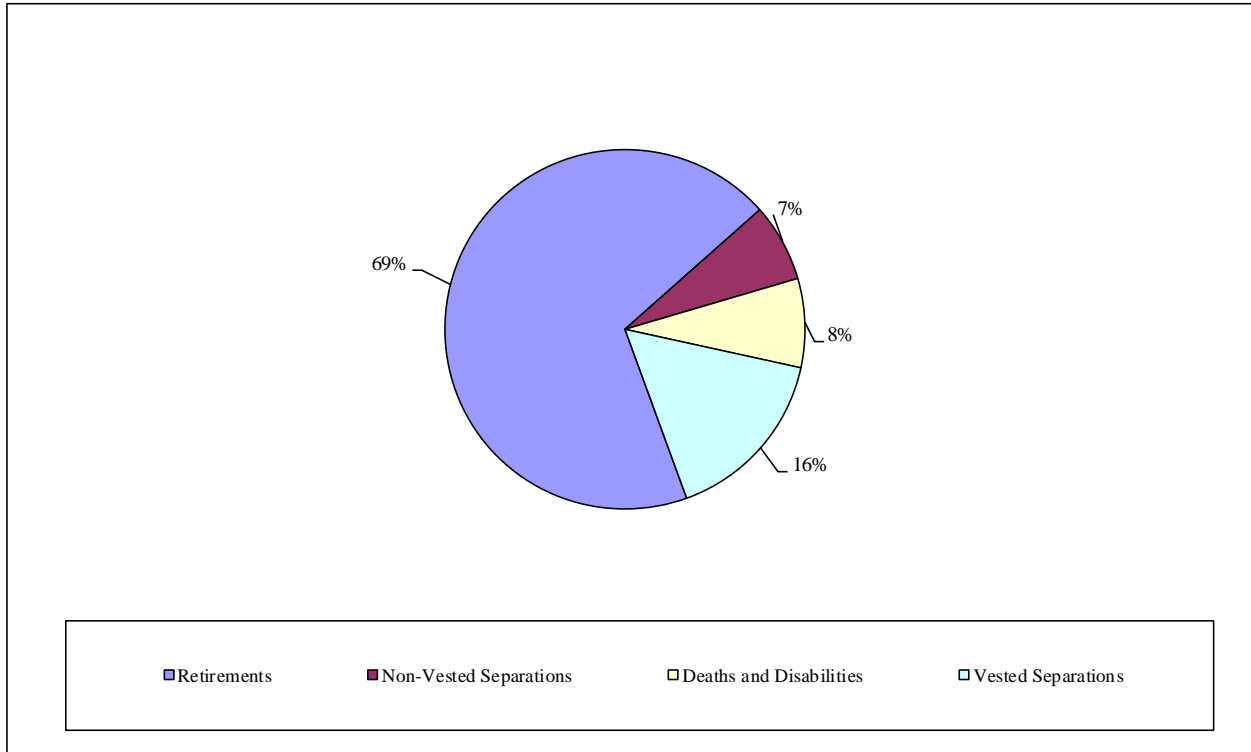
Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
Under 20	1							1	\$ 26,593
20-24	45	3						48	1,215,157
25-29	96	27	2					125	4,023,017
30-34	70	60	42	11				183	6,722,525
35-39	83	75	111	66	6			341	13,038,790
40-44	97	87	128	177	46	4		539	21,993,696
45-49	63	107	164	292	120	80	3	829	36,608,580
50-54	72	88	152	286	183	234	49	1,064	46,325,624
55-59	48	61	117	228	163	234	104	955	42,526,554
60-64	39	40	57	84	60	96	64	440	20,650,662
65-69	10	14	22	22	14	14	21	117	5,649,237
70-74	2	4	9	10	1	4	7	37	1,606,008
75-79	1	1	4	1	0	0	2	9	335,754
Totals	627	567	808	1,177	593	666	250	4,688	\$200,722,197

Group Averages:

Age: 49.6 years
Service: 16.4 years
Annual Pay: \$42,816

Service shown in this schedule is vesting/eligibility service as of June 30, 2015. Frozen benefit service as of June 30, 2014 was not provided in the June 30, 2015 data and was estimated from the data previously submitted for the June 30, 2014 valuation.

**EXPECTED TERMINATIONS FROM ACTIVE EMPLOYMENT
FOR CURRENT ACTIVE MEMBERS**



The chart shows the expected future development of the present population in simplified terms. The Retirement System presently covers 4,688 active members. Eventually, 306 people are expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. 4,021 people are expected to receive monthly retirement benefits either by retiring directly from active service, or by retiring from vested deferred status. 361 people are expected to become eligible for benefits as a result of death-in-service or disability.

Actual verses expected retirements for the 2015 fiscal year is shown below:

Year Ended June 30,	Expected	Actual
2015	233	189

RETIREES AND BENEFICIARIES JUNE 30, 2015
TABULATED BY ATTAINED AGES
RETIREMENT SYSTEM TOTALS

Attained Ages	Age & Service#		Disability		Death-in-Service		Totals	
	No.	Monthly Allowances	No.	Monthly Allowances	No.	Monthly Allowances	No.	Monthly Allowances
Under 20*	11	\$ 16,296	1	\$ 494	7	\$ 3,769	19	\$ 20,559
20-24	2	4,628					2	4,628
25-29	8	6,493					8	6,493
30-34	7	3,415	0	0			7	3,415
35-39	10	8,741	6	2,135	1	773	17	11,649
40-44	17	10,848	24	13,989	1	421	42	25,258
45-49	70	94,961	51	31,109	4	4,275	125	130,345
50-54	329	583,498	116	78,104	15	18,046	460	679,648
55-59	904	2,056,625	234	194,544	40	48,645	1,178	2,299,814
60-64	1,769	3,540,453	234	311,145	39	48,118	2,042	3,899,716
65-69	2,132	3,887,170	191	216,080	39	69,779	2,362	4,173,029
70-74	1,558	2,656,794	106	105,642	41	53,446	1,705	2,815,882
75-79	1,093	1,561,356	72	63,945	32	36,020	1,197	1,661,321
80-84	902	1,167,374	35	26,533	49	49,216	986	1,243,123
85-89	872	993,857	38	29,581	58	47,557	968	1,070,995
90-94	526	577,319	22	16,246	30	24,047	578	617,612
95 and Over	175	142,091	2	1,300	11	6,777	188	150,168
Totals	10,385	\$17,311,919	1,132	\$1,090,847	367	\$410,889	11,884	\$18,813,655

* May include records with defective birth dates.

Includes survivor beneficiaries of deceased retirees.

RETIREES AND BENEFICIARIES JUNE 30, 2015
TABULATED BY YEAR OF RETIREMENT

Year of Retirement	No.	Monthly Allowances	
		Total	Average
1950 & before	2	\$ 3,174	\$ 1,587
1951-1955	1	3,454	3,454
1956-1960	6	2,629	438
1961-1965	23	9,749	424
1966-1970	61	31,227	512
1971-1975	265	163,008	615
1976-1980	524	466,004	889
1981-1985	889	959,077	1,079
1986-1990	1,022	1,227,338	1,201
1991-1995	1,510	1,925,958	1,275
1996-2000	1,735	2,924,130	1,685
2001-2005	2,140	4,075,385	1,904
2008	386	757,603	1,963
2009	500	953,700	1,907
2010	468	957,653	2,046
2011	599	1,235,441	2,063
2012	795	1,514,524	1,905
2013	456	753,700	1,653
2014	407	693,297	1,703
2015	95	156,604	1,648
Totals	11,884	\$18,813,655	\$1,583

SECTION D
METHODS AND ASSUMPTIONS

**SUMMARY OF ASSUMPTIONS AND METHODS USED FOR
ACTUARIAL VALUATIONS
ADOPTED BY BOARD OF TRUSTEES**

All assumptions are estimates of future experience except as noted. The rationale for the assumptions is based on experience studies where noted.

Economic Assumptions

The investment return rate used in making the valuation was 6.75% per year, compounded annually (net after investment and administrative expenses). This assumption is prescribed by the Eighth Amended Plan for the Adjustment of Debts of the City of Detroit (POA).

Price inflation is not directly used in the valuation. For purposes of assessing the reasonability of the investment return assumptions, we assumed price inflation of 2.25% per year.

Non-Economic Assumptions

The mortality table used to measure retired life mortality was 100% of the RP-2014 Blue Collar Annuitant Table for set-forward 1 year for males and 100% of the RP-2014 Blue Collar Annuitant Table set-forward 1 year for females. Tables were extended below age 50 with a cubic spline to the published Juvenile rates. Pre-retirement mortality is based on the corresponding Employee tables with corresponding set forward. The tables are projected to be fully generational, based on the 2-dimensional, sex distinct mortality improvement scale MP-2014 (which was published and intended to be used with RP-2014). This table was first used as of June 30, 2014. For disabled members, the same tables are used. The rationale for the mortality assumption is based on the 2008-2013 Mortality Experience Study issued February 4, 2015.

The probabilities of retirement for members eligible to retire are shown on pages 21 and 22. These probabilities were revised for the June 30, 2008 valuation. The rationale is based on the 2002-2007 Experience Study.

The probabilities of separation from service (including *death-in-service* and *disability*) are shown for sample ages on page 23. These probabilities were revised for the June 30, 2008 valuation. The rationale is based on the 2002-2007 Experience Study.

**SUMMARY OF ASSUMPTIONS AND METHODS USED FOR
ACTUARIAL VALUATIONS
ADOPTED BY BOARD OF TRUSTEES**

Funding Methods

The unit credit cost method was used in determining age & service pension liabilities, vesting liabilities, and casualty pension liabilities. Under this method, there is no normal cost since benefits are frozen and there are no future accruals and actuarial accrued liability is the present value of each individual's accrued benefit.

Unfunded Actuarial Accrued Liabilities. Actual employer contributions through June 30, 2023 are set by the POA. The amortization period and method after 2023 has not yet been established by the Board.

Employer contribution dollars were assumed to be paid at the end of the employer fiscal year.

Present assets are set equal to the Market Value.

The data about persons now covered and about present assets were furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the Actuary.

SINGLE LIFE RETIREMENT VALUES

**BASED ON RP-2014 BLUE COLLAR
100% OF MALE RATES SET-FORWARD 1 YEAR
100% OF FEMALE RATES SET-FORWARD 1 YEAR**

Sample Attained Ages in 2015	Future Life Expectancy (years)	
	Men	Women
45	38.28	41.66
50	33.34	36.61
55	28.59	31.72
60	24.07	26.98
65	19.80	22.42
70	15.82	18.12
75	12.20	14.17
80	9.04	10.69

**PROBABILITIES OF AGE/SERVICE RETIREMENT
FOR MEMBERS ELIGIBLE TO RETIRE**

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year with Unreduced Benefits		
	EMS	D.O.T.	Others
45	25%		
46	25%		
47	25%		
48	22%		
49	20%		
50	18%	55%	50%
51	15%	50%	50%
52	15%	50%	45%
53	15%	50%	45%
54	15%	55%	40%
55	15%	50%	30%
56	15%	50%	30%
57	15%	50%	30%
58	15%	50%	30%
59	15%	55%	40%
60	40%	40%	25%
61	30%	30%	25%
62	30%	30%	25%
63	30%	30%	25%
64	30%	30%	25%
65	30%	30%	35%
66	30%	30%	30%
67	30%	30%	25%
68	30%	50%	25%
69	30%	50%	25%
70	100%	100%	20%
71			20%
72			20%
73			20%
74			20%
75			20%
76			20%
77			20%
78			20%
79			20%
80			100%
Ref	537	1648	1647

Rationale for assumption is 2002 to 2007 Experience Study. Additional retirement rates for Component I (Hybrid Plan) eligibility are not reflected in this valuation due to materiality. The current assumption contains a margin for adverse experience.

**PROBABILITIES OF EARLY RETIREMENT
FOR MEMBERS ELIGIBLE FOR EARLY RETIREMENT**

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year with Reduced Benefits
55	7%
56	8%
57	9%
58	10%
59	12%
60	12%
61	12%
62	12%
63	12%
64	12%
Ref	1649

Rationale for assumption is 2002 to 2007 Experience Study.

**SAMPLE RATES OF SEPARATION FROM ACTIVE
EMPLOYMENT BEFORE RETIREMENT**

Sample Ages	Years of Service	% of Active Members Separating Within Next Year			
		Withdrawal			
		EMS	D.O.T.	Others	
Men	Women				
ALL	0	11.00%	18.00%	18.00%	20.00%
	1	10.00%	16.00%	15.00%	16.00%
	2	8.00%	14.00%	13.00%	14.00%
	3	8.00%	11.00%	11.00%	12.00%
	4	7.00%	9.00%	10.00%	10.00%
25	5 & Over	6.70%	8.00%	7.60%	7.60%
30		5.90%	7.60%	7.22%	7.22%
35		5.20%	5.56%	5.28%	5.28%
40		4.40%	4.26%	4.05%	4.05%
45		3.40%	3.69%	3.51%	3.51%
50		2.40%	3.50%	3.33%	3.33%
55		2.00%	3.50%	3.33%	3.33%
60	0.00%	3.50%	3.33%	3.33%	
Ref		338	143	584	188
		1068	212	212 x 0.95	212 x 0.95

Sample Ages	% of Active Members Becoming Disabled Within Next Year			
	D.O.T.		Others	
	Ordinary	Duty	Ordinary	Duty
25	0.02%	0.03%	0.01%	0.25%
30	0.05%	0.08%	0.04%	0.29%
35	0.14%	0.21%	0.11%	0.34%
40	0.27%	0.42%	0.21%	0.39%
45	0.51%	0.79%	0.40%	0.45%
50	0.66%	1.03%	0.51%	0.52%
55	0.76%	1.18%	0.59%	0.60%
60	0.86%	1.34%	0.67%	0.70%
Ref	23	x 0.45	23	x 0.70
	23	x 0.35	423	x 0.90

Rationale for assumption is 2002 to 2007 Experience Study.

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

Benefit Service	Exact Fractional service is used to determine the amount of benefit payable.
Decrement Operation	Disability and mortality decrements do not operate during the first 5 years of service. Disability and withdrawal do not operate during retirement eligibility.
Decrement Timing	Decrements of all types are assumed to occur mid-year.
Eligibility Testing	Eligibility for benefits is determined based upon the age nearest birthday and rounded service on the date the decrement is assumed to occur.
Forfeitures	None.
Incidence of Contributions	Contributions are assumed to be received at the end of the year.
Marriage Assumption	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses for active member valuation purposes.
Normal Form of Benefit	Straight life is the normal form of benefit. Straight life is generally the most valuable under valuation assumptions. Actuarial equivalent factors are based on 7.5% interest and 1984 Group Annuity Mortality table.
Service Credit Accruals	Service accruals stop as of June 30, 2014 for measurement of Component II liabilities. However, future service in Component I may be used to satisfy benefit eligibility requirement in Component II.
Administrative Expenses	The investment return assumption is mandated to be net of administrative expense in the plan document. No other provision for administrative expenses is included in this valuation.
Sick Leave	As of June 30, 2014, this information was included in the 2014 AFC amounts.
AFC Adjustment	Reported 2014 AFC amounts were increased by 2.0% for active members due to data discrepancies related to the reported AFC. This adjustment was made based on discussions with System staff and the System's auditor.
Member Contributions	Member contributions to this Component II plan are assumed to have ceased with the bankruptcy.

Rationale for assumption is 2002 to 2007 Experience Study, modified as necessary for changes in data or administration.

RECONCILIATION OF RAW DATA

ACTIVE MEMBERS

A) Number reported in GC_Benefits table:	5,145
B) Number reported as inactive (status = F):	-
C) Vested members returning to work:	-
D) Records for 36th District Court Judges:	(27)
E) Active members hired after June 30, 2014:	(490)
F) Members retired/terminated vested after 6/30/2015 and not reported in 2015 active data (valued using 2014 active data):	67
G) Number of defective records:	<u>(7)</u>
H) Number of records to value:	4,688

INACTIVE VESTED MEMBERS

A) Number of records reported on data file:	2,859
B) Records with service less than 8 years:	(113)
C) Also listed as retired:	(25)
D) In 2014 vested data but not in 2015 data. Valued using 2014 vested data:	<u>11</u>
E) Number of records to value:	2,732

RETIRED MEMBERS AND BENEFICIARIES

A) Number of records reported on data file:	40,682
B) Number of records in P/F plan:	(15,097)
C) Records not currently in receipt of benefits:	(13,701)
D) Number of defective records:	<u>-</u>
E) Number of records valued:	11,884

SECTION E
PLAN PROVISIONS

SUMMARY OF BENEFIT PROVISIONS EVALUATED

Component II Frozen Benefits

All Component II benefits are frozen as of June 30, 2014 based on service and average final compensation accrued as of that date and the provisions of the Detroit General Retirement System as it existed on June 30, 2014. Frozen benefits are further reduced by 4.5% and all future cost-of-living adjustments (“COLA’s”) were eliminated. Benefits resulting from the Annuity Savings Fund and benefits paid from the Annuity Reserve Fund were subject to a separate reduction described as a “Claw-back.” Details of the claw-back provision are complicated and can be found in the Eighth Amended Plan of Adjustment. The benefits evaluated in this report are the frozen reduced benefits after the claw-back. Component II benefits are payable after separation from service, upon meeting the eligibility conditions of the plan as it existed on June 30, 2014, regardless of whether the individual is eligible to receive a Component I benefit at that time.

Our understanding of the June 30, 2014 plan provisions is provided below for completeness. The material below does not have legal standing and is not intended to cover all potential situations that could occur. If there are discrepancies between the description below, and appropriate legal documents, the latter necessarily govern.

Age and Service Pension

Eligibility - Any age (minimum age 55 for non-EMS members hired after 1995) with 30 years of service (25 for EMS members), or age 60 with 10 years of service, or age 65 with 8 years of service.

Annual Amount - EMS Members: Sum of a) a basic pension of \$12 for each of the first 10 years of service, plus b) a pension equal to 2.0% of AFC multiplied by years of service. Maximum benefit is 90% of AFC. **Other Members:** Sum of a) a basic pension of \$12 for each of the first 10 years of service, plus b) a pension equal to the first 10 years of service multiplied by 1.6% of AFC, plus 1.8% of AFC for each year of service greater than 10 years up to 20 years, plus 2.0% of AFC for each year of service greater than 20 years up to 25 years, plus 2.2% of AFC for each year of service greater than 25 years. Future benefit accruals for certain active members (depending on bargaining unit) were reduced to 1.5% of final average compensation per year of service.

Type of Average Final Compensation (AFC) - Highest 3 consecutive years out of the last 10. Pension benefits will not be diminished if compensation is reduced because of a fiscal emergency. Effective July 1, 1999, in computing the AFC, a member shall have the option of adding the value of 25% of unused accrued sick leave to the earnings used in computing the AFC. Longevity is added to AFC in accordance with the following schedule: \$150 after 5 years, \$300 after 10 years, \$450 after 15 years, \$600 after 20 years, and \$750 after 25 years.

Early Retirement

Eligibility - Any age with 25 or more years of service (min. age 55 for members hired after 1995).

Annual Amount - Same as regular retirement but actuarially reduced.

**SUMMARY OF BENEFIT PROVISIONS EVALUATED
(CONTINUED)**

Deferred Retirement (Vested Benefit)

Eligibility - Hired prior to 7-1-80: Age 40 with 8 years of service. Hired on or after 7-1-80: Any age with 10 years of service.

Benefit Commencement - APTE hired prior to July 1, 1988: Benefit begins at the age the member would have become eligible for regular retirement if service had continued. **SAAA, Non-Union and lawyers hired prior to June 30, 1986:** Benefit begins at the age the member would have become eligible for regular retirement. **Others:** Benefits based on service rendered by June 30, 1986 begin at the age the member would have become eligible for regular retirement. Benefits based on service rendered after July 1, 1986 begin at age 62.

Annual Amount - Same as regular retirement but based on average final compensation and service at the time of termination.

Duty Disability Retirement

Eligibility - Service related disability before age 60. No service requirement.

Annual Amount - An annuity which is the actuarial equivalent of the accumulated contributions at date of disability plus a pension of two-thirds of average final compensation at time of disability. The maximum annual pension is \$9,000. At the earliest of when the member would have accrued 30 years of service credit (25 for EMS) or age 60, the annuity is recomputed assuming contributions would have continued at a salary level equal to final compensation. The pension is recomputed with additional service credit granted from the date of disability to age 60 (or 30 years of service credit) with no maximum.

Non-Duty Disability Retirement

Eligibility - Disability from any cause before age 60 with 10 or more years of service.

Annual Amount - Computed in the same manner as a regular retirement benefit. Maximum annual pension to age 60 is \$6,000. Benefit is recomputed at age 60 with no maximum.

Duty Death Before Retirement

Eligibility - Death from service related causes. No age or service requirements.

Annual Amount - One-third of final compensation to the surviving spouse for life or until remarriage, plus an equal share of 1/4 of final compensation to each unmarried child under age 18. If there is no eligible spouse, eligible children each receive 1/4 of final compensation; if there are more than 2 such children, each child shares an equal part of 1/2 of final compensation. Maximum total amount for spouse and children is \$9,000 annually. If there is no eligible spouse or children, dependent parents each receive 1/6 of deceased's final compensation, to a total maximum of \$600 annually.

SUMMARY OF BENEFIT PROVISIONS EVALUATED (CONCLUDED)

Non-Duty Death Before Retirement

Eligibility - Death-in-service at any age with 15 years of service; or after age 60 with 10 years of service; or after age 65 with 8 years of service.

Annual Amount - To Surviving Spouse: Computed as a regular retirement benefit but reduced in accordance with a 100% joint and survivor election for members with 20 or more years of service. For members with 15 years of service but less than 20, benefit is reduced in accordance with a 50% joint and survivor election. To Dependent Children if no Surviving Spouse: \$9,000 payable to age 19 of the youngest child or for life if child is physically or mentally impaired for members with 20 or more years of service (\$6,000 if less than 20 years of service).

Post-Retirement Cost-of-Living Adjustments

Benefit is increased annually by 2.25% of the **original** pension amount at retirement. Post-retirement cost-of-living increases were eliminated on future accruals for certain active members (depending on bargaining unit).

Member Contributions

Members have the option of choosing one of four contribution amounts: (1) 0%; (2) 3.0% of compensation up to the Social Security wage base, plus 5.0% of compensation in excess of the Social Security wage base; (3) 5.0% of total compensation; or (4) 7.0% of total compensation. Member contributions can be paid as a lump sum or annuitized at retirement to provide an annuity in addition to the pension (which is not affected by the level of member contributions).

SECTION F

GLOSSARY

GLOSSARY

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as “accrued liability” or “past service liability.”

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Assumptions. Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future plan benefits” between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”

Actuarial Equivalent. A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

AFC. Average Final Compensation.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

APTE. Association of Professional and Technical Employees.

GLOSSARY

Contribution Budgeting Liability. An expected return based measure of pension obligation.

DIA. Detroit Institute of Art.

D.O.T. Department of Transportation.

DWSD. Detroit Water and Sewerage Department.

EMS. Emergency Medical Service.

Experience Gain (Loss). A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

GASB. The Governmental Accounting Standards Board.

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as “current service cost.” Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

POA. The 8th Amended Plan for the Adjustment of the Debt of the City of Detroit.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

SAAA. Senior Accountants, Analysts, and Appraisers Association.

Solvency Liability. A market-based measure of the present value of accrued benefits at a municipal bond discount rate unadjusted for the credit quality of the plan sponsor.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as “unfunded accrued liability.”

UTGO. Unlimited Tax General Obligation.

Valuation Assets. The value of current plan assets recognized for valuation purposes.