Gabriel Roeder Smith & Company
Consultants & Actuaries

CITY OF DEARBORN HEIGHTS
POLICE AND FIRE RETIREMENT SYSTEM

ANNUAL ACTUARIAL VALUATION REPORT
JULY 1, 2016

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April 8, 2016

The Board of Trustees
City of Dearborn Heights Police and Fire Retirement System
Dearborn Heights, Michigan

Dear Board Members:

The results of the July 1, 2016 annual actuarial valuation of the City of Dearborn Heights Police and Fire Retirement System are presented in this report.

The purpose of the valuation was to measure the System's funding progress, and to determine the employer contribution for the 2016-2017 fiscal year. This report should not be relied upon for any other purpose. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different.

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. GRS is not responsible for unauthorized use of this report.

The contribution rate shown on page A-2 may be considered as a minimum contribution rate that complies with the Board’s funding policy. Users of this report should be aware that contributions made at that rate do not guarantee benefit security. Given the importance of benefit security to any retirement system, we suggest that contributions to the System in excess of those presented in this report be considered.

The findings in this report are based on data and other information through July 1, 2016. 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; 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.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

The valuation was based upon information, furnished by the City, concerning Retirement System benefits, financial transactions, and individual members, terminated members, retirees and beneficiaries. Data was checked for internal and year to year consistency, but was not otherwise audited, by us. As a result, we are unable to assume responsibility for the accuracy or completeness of the data provided.

In addition, this report was prepared using certain assumptions approved by the Board as described in the section of this report entitled Assumption and Methods.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the City of Dearborn Heights Police and Fire Retirement System as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

Mark Buis and Francois Pieterse are members of the American Academy of Actuaries (MAAA). These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

Gabriel, Roeder, Smith & Company will be pleased to review this valuation with the Board of Trustees and to answer any questions pertaining to the valuation.

Respectfully submitted,

GABRIEL, ROEDER, SMITH & COMPANY

By Mark Buis

Mark Buis, FSA, EA, FCA, MAAA

Francois Pieterse, ASA, MAAA

MB/FP:mrb

SECTION A
VALUATION RESULTS

FUNDING OBJECTIVE

The funding objective of the Retirement System is to establish and receive contributions, expressed as level percents of active member payroll, that will accumulate assets during each member's working years which, together with investment income, will be sufficient to pay promised benefits after retirement.

EMPLOYER CONTRIBUTIONS

The Retirement System is supported by member contributions, City contributions and investment income from Retirement System assets.

Employer Contributions which satisfy the funding objective are determined by the annual actuarial valuation and are sufficient to:

(1) Cover the actuarial present value of benefits allocated to the current year by the actuarial cost method described in Section C (the normal cost); and

(2) Finance over a period of future years the actuarial present value of benefits not covered by valuation assets and anticipated future normal costs (the unfunded actuarial accrued liability).

Computed employer contributions for the fiscal year beginning July 1, 2016 are shown on page A-2.

Computed Contributions for the Fiscal Year Beginning July 1, 2016

Contributions	Fiscal Year Beginning July 1, 2015	2016
Number Active [1]	77	87
Payroll	$5,843,512	$6,339,439
Projected Payroll	6,048,035	6,561,319
Total Normal Cost Rate	17.98 %	18.06 %
Employee Contribution Rate	4.79 %	4.80 %
Net Employer Normal Cost Rate	13.19 %	13.26 %
Employer Normal Cost (Dollars)	$ 797,736	$ 870,031
Amortization Payment [2]	1,545,878	1,640,986
Net City Contribution	**$2,343,614**	**$2,511,017**
Estimated Percent of Pay Contribution	38.75 %	38.27 %

[1] *Data as of one year prior to the valuation date. Liabilities and normal costs were "rolled forward" from July 1, 2015 to July 1, 2016. Estimated payroll shown above includes only active members who have not applied for DROP.*

[2] *Amortization payment based on a 19-year amortization of Unfunded Accrued Liability as of July 1, 2016 and 20-year amortization of the Unfunded Accrued Liability as of July 1, 2015.*

PRESENT VALUE OF FUTURE BENEFITS AND ACCRUED LIABILITY AS OF JULY 1, 2016

	June 30, 2015	June 30, 2016
A. Accrued Liability		
1. For retirees and beneficiaries (including supplemental)*	$ 158,613,865	$ 168,257,082
2. For vested terminated members	-	126,943
3. For present active members		
a. Value of expected future benefit payments	34,232,225	37,410,645
b. Value of future normal costs	8,655,035	9,560,345
c. Active member accrued liability: (a) - (b)	25,577,190	27,850,300
4. Total accrued liability	184,191,055	196,234,325
B. Present Assets (Funding Value)	161,610,610	173,126,280
C. Unfunded Accrued Liability: (A.4) - (B)	22,580,445	23,108,045
D. Funding Ratio: (B) / (A.4)	87.7%	88.2%

* *Accrued Liability for retirees and beneficiaries includes all DROP balances and liability for current DROP members.*

Unless otherwise indicated, a funded ratio measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regard to any funded status measurements presented in this report:

1. The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations, in other words of transferring the obligations to a unrelated third party in an arm's length market value type transaction.

2. The measurement is dependent upon the actuarial cost method which, in combination with the plan's amortization policy, affects the timing and amounts of future contributions. The amount of future contributions will most certainly differ from those assumed in this report due to future actual experience differing from assumed experience based upon actuarial assumptions. A funded ratio measurement in this report of 100% is not synonymous with no required future contributions. If the funded ratio were 100%, the plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).

3. The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets.

DEVELOPMENT OF FUNDING VALUE OF RETIREMENT SYSTEM ASSETS
JULY 1, 2016

Year Ended June 30:	2015	2016	2017	2018	2019	2020
A. Funding Value Beginning of Year	$141,976,722	$155,584,467				
B. Market Value End of Year	178,418,154	175,722,807				
C. Market Value Beginning of Year	154,744,304	178,418,154				
D. Non-Investment Net Cash Flow	(6,561,070)	(6,629,644)				
E. Investment Income						
E1. Market Total: B - C - D	30,234,920	3,934,297				
E2. Amount for Immediate Recognition (7.0%)	9,708,733	10,658,875				
E3. Amount for Phased-In Recognition: E1-E2	20,526,187	(6,724,578)				
F. Phased-In Recognition of Investment Income						
F1. Current Year: 0.20 x E3	4,105,237	$ (1,344,916)				
F2. First Prior Year	2,089,716	4,105,237	$ (1,344,916)			
F3. Second Prior Year	(2,505,119)	2,089,716	4,105,237	$ (1,344,916)		
F4. Third Prior Year	5,153,830	(2,505,119)	2,089,716	4,105,237	$(1,344,916)	
F5. Fourth Prior Year	1,616,418	5,153,828	(2,505,118)	2,089,716	4,105,239	$(1,344,914)
F6. Total Recognized Investment Gain	10,460,082	7,498,746	2,344,919	4,850,037	2,760,323	(1,344,914)
G. Preliminary Funding Value End of Year: A + D + E2 + F6	155,584,467	167,112,444				
H. Expected Contributions for Following Year	3,112,539	2,658,861				
I. Expected Disbursements for Following Year	7,812,800	8,150,682				
J. Expected Earnings for Following Year	10,726,404	11,505,657				
K. Funding Value of Assets for Following Year	161,610,610	173,126,280				

ESTIMATED MARKET RATES OF RETURN

Year Ending June 30	Contributions	Investment Earnings	Benefit Payments	Market Value End of Year	Estimated Market Rate of Return
2006	$1,114,548	$ 11,920,986	$5,365,056	$134,403,021	10.63 %
2007	1,096,665	26,419,378	5,518,480	156,400,584	19.99
2008	1,141,477	(5,183,498)	6,076,854	146,281,709	(3.37)
2009	1,438,858	(31,294,419)	6,112,778	110,313,370	(21.74)
2010	1,707,471	16,787,522	6,495,106	122,313,257	15.56
2011	2,814,198	34,279,782	10,483,799	148,923,438	28.93
2012	2,858,205	(3,264,616)	8,841,703	139,675,324	(2.24)
2013	2,862,144	19,880,949	7,674,113	154,744,304	14.48
2014	3,743,857	29,676,159	9,746,166	178,418,154	19.56
2015	**3,971,083**	**3,274,965**	**9,941,395**	**175,722,807**	**1.87**

DERIVATION OF ACTUARIAL GAIN (LOSS) FOR THE YEAR ENDING JUNE 30, 2016

The actuarial gains or losses realized in the operation of the Retirement System provide an experience test. Gains and losses are expected to cancel each other over a period of years (in the absence of double-digit inflation) and sizable year to year fluctuations are common.

(1)	UAL* at start of year	$ 22,580,445
(2)	Normal cost	1,179,725
(3)	Actual contributions	3,971,083
(4)	Interest accrual	1,482,934
(5)	Expected UAL before changes	21,272,021
(6)	Change due to actuarial assumptions/methods	4,551,678
(7)	Change from revised benefits	0
(8)	Expected UAL after changes	25,823,699
(9)	Actual UAL at end of year	23,108,045
(10)	Gain (loss): (8) - (9)	2,715,654

* *Unfunded accrued liability.*

RECONCILIATION OF TOTAL BONUS FUNDS
JULY 1, 2016

A.	Fund Balance Beginning of Year	$ 5,355,448
B.	Distributions During Year	673,673
C.	Unadjusted Fund Balance End of Year	4,681,775
D.	Average Balance: (A + C) x .5	5,018,613
E.	Estimated Market Rate of Return for Prior Plan Year	1.87%
F.	Accrued Interest: D x E	93,849
G.	Fund Balance End of Year with Interest	4,775,624
H.	Rate of Return in Excess of 9%, Up to 1%	0.00%
I.	Market Value of Total Fund as of July 1, 2015	175,722,807
J.	Excess Earnings	-
K.	Excess Earnings Allocated to Bonus Funds	-
L.	Total Fund Balance End of Year: G + K	4,775,624

FIREFIGHTERS BONUS FUND

		6/30/2014	6/30/2015	6/30/2016
A.	Fund Balance Beginning of Year	$ 852,632	$ 1,290,366	$ 1,410,120
B.	Distributions During Year	84,154	120,825	158,901
C.	Unadjusted Fund Balance End of Year	768,478	1,169,541	1,251,219
D.	Average Balance: (A + C) x .5	810,555	1,229,954	1,330,670
E.	Estimated Market Rate of Return for Prior Plan Year	14.48%	19.56%	1.87%
F.	Accrued Interest: D x E	117,368	240,579	24,884
G.	Fund Balance End of Year with Interest	885,846	1,410,120	1,276,103
H.	Computed Excess Earnings Contribution	404,520	444,030	-
I.	Pensions Paid in Prior Plan Year	1,593,998	1,601,089	1,919,617
J.	Average Monthly Pensions in Prior Plan Year: I / 12	132,833	133,424	159,968
K.	Max. Fund Balance After Excess Earnings Contrib.: 10 x J	1,328,332	1,334,241	1,599,681
L.	Maximum Excess Earnings Contribution*	404,520	-	-
M.	Fund Balance End of Year: G + L	1,290,366	1,410,120	1,276,103

* *The Excess Earnings Contribution in any year cannot cause the Bonus Fund to have a balance in excess of 10 times the total average monthly pension benefit payments paid in the previous year to retirees covered by the Bonus Fund (see Line K).*

POLICE COMMAND BONUS FUND

	6/30/2014	6/30/2015	6/30/2016
A. Fund Balance Beginning of Year	$ 869,437	$ 1,132,733	$1,247,470
B. Distributions During Year	97,309	97,309	171,316
C. Unadjusted Fund Balance End of Year	772,128	1,035,424	1,076,154
D. Average Balance: (A + C) x .5	820,783	1,084,079	1,161,812
E. Estimated Market Rate of Return for Prior Plan Year	14.48%	19.56%	1.87%
F. Accrued Interest: D x E	118,849	212,046	21,726
G. Fund Balance End of Year with Interest	890,977	1,247,470	1,097,880
H. Computed Excess Earnings Contribution	418,744	526,289	-
I. Pensions Paid in Prior Plan Year	1,359,280	1,379,301	2,248,278
J. Average Monthly Pensions in Prior Plan Year: I / 12	113,273	114,942	187,357
K. Max. Fund Balance After Excess Earnings Contrib.: 10 x J	1,132,733	1,149,417	1,873,565
L. Maximum Excess Earnings Contribution*	241,756	-	-
M. Fund Balance End of Year: G + L	1,132,733	1,247,470	1,097,880

* *The Excess Earnings Contribution in any year cannot cause the Bonus Fund to have a balance in excess of 10 times the total average monthly pension benefit payments paid in the previous year to retirees covered by the Bonus Fund (see Line K).*

POLICE PATROL BONUS FUND

	6/30/2014	6/30/2015	6/30/2016
A. Fund Balance Beginning of Year	$314,311	$351,890	$412,598
B. Distributions During Year	7,398	7,398	48,643
C. Unadjusted Fund Balance End of Year	306,913	344,492	363,955
D. Average Balance: (A + C) x .5	310,612	348,191	388,277
E. Estimated Market Rate of Return for Prior Plan Year	14.48%	19.56%	1.87%
F. Accrued Interest: D x E	44,977	68,106	7,261
G. Fund Balance End of Year with Interest	351,890	412,598	371,216
H. Computed Excess Earnings Contribution	385,824	422,230	-
I. Pensions Paid in Prior Plan Year	319,687	457,635	964,535
J. Average Monthly Pensions in Prior Plan Year: I / 12	26,641	38,136	80,378
K. Max. Fund Balance After Excess Earnings Contrib.: 10 x J	266,406	381,363	803,779
L. Maximum Excess Earnings Contribution*	-	-	-
M. Fund Balance End of Year: G + L	351,890	412,598	371,216

* *The Excess Earnings Contribution in any year cannot cause the Bonus Fund to have a balance in excess of 10 times the total average monthly pension benefit payments paid in the previous year to retirees covered by the Bonus Fund (see Line K).*

PRE-2001 RETIREE BONUS FUNDS

	6/30/2014	6/30/2015	6/30/2016
A. Fund Balance Beginning of Year	$1,592,307	$1,855,245	$2,285,260
B. Distributions During Year	285,324	295,595	294,813
C. Unadjusted Fund Balance End of Year	1,306,983	1,559,650	1,990,447
D. Average Balance: (A + C) x .5	1,449,645	1,707,448	2,137,854
E. Estimated Market Rate of Return from Prior Plan Year	14.48%	19.56%	1.87%
F. Accrued Interest: D x E	209,909	333,977	39,978
G. Fund Balance End of Year with Interest	1,516,892	1,893,627	2,030,425
H. Excess Earnings	338,353	391,633	-
I. Total Fund Balance End of Year: G + H (Max. 15 x J.2.)*	1,855,245	2,285,260	2,030,425
J. Maximum Disbursement for Following Fiscal Year			
1. Total Annual Benefit Payments for Prior Year Pre-7/2001 Retirees	3,547,144	3,537,759	3,449,014
2. Maximum Total Annual Distribution: (J.1. / 12)	295,595	294,813	287,418

* *The maximum fund balance is 15 times the prior year's average monthly gross benefit distributions.*

COMMENTS, RECOMMENDATION, AND CONCLUSION

Comment 1: Contribution requirements increased from the prior year, from $2,343,614 to $2,511,017. Increases due to the change in mortality tables that was adopted by the Board were partially offset by favorable investment performance over the last five years.

Comment 2: The market value rate of investment return on System assets for the year ending June 30, 2015, 1.87%, was below the long term assumed level of 7.0%. However, under the asset valuation method, only a portion of investment gains and losses are recognized in any one year. As a result, the rate of return recognized in this valuation was higher than 1.87% and differences between the market value of assets and funding value of assets will be recognized in future years.

Comment 3: Based on projected benefit payments and assuming the long term discount rate of 7%, the bonus funds are expected to be depleted in about 6 years.

Conclusion: The City's contribution to the City of Dearborn Heights Police and Fire Retirement System for the fiscal year beginning July 1, 2016 has been computed to be $2,511,017.

SECTION B
SUMMARY OF BENEFIT PROVISIONS AND VALUATION DATA

SUMMARY OF BENEFIT PROVISIONS EVALUATED OR CONSIDERED AS OF JUNE 30, 2016

Service Retirement

Eligibility:
Police: 25 years of service and age 50 (prior to age 50 with City approval). Effective July 1, 2009, 25 years of service.

Police Command: 25 years of service and age 50 (prior to age 50 with City approval). Effective July 1, 2009, 25 years of service.

Fire: 25 years of service and age 50 (prior to age 50 with City approval). Age 55 with 20 years of service.

Benefit Amount:
Police: 2.8% of AFC for first 25 years of service, plus 5% of AFC at 25 years of service, plus 1% of AFC for years of service in excess of 25.

Police Command: 2.8% of AFC for first 25 years of service, plus 5% of AFC at 25 years of service, plus 1.5% of AFC for years of service in excess of 25 (but not more than 30) with a maximum benefit of 82.5% of AFC.

Fire: 2.8% of AFC for first 25 years of service, plus 5% of AFC at 25 years of service, plus 1.5% of AFC for years of service in excess of 25 (but not more than 30) with a maximum benefit of 82.5% of AFC.

Compulsory Retirement

Age 65 or, if requested by the City, age 60.

Average Final Compensation (AFC)

Police: The average of five years of highest compensation in the last 10 years of service. Effective July 1, 2004, the average of three years of highest compensation in the last 10 years of service. Effective July 1, 2009, the average of three years of highest compensation in all of the years of service.

Police Command: Effective July 1, 2005, the average of three years of highest compensation in the last 10 years of service. Effective July 1, 2009, the average of three years of highest compensation in all of the years of service.

Fire: The average of three years of highest compensation in the last 10 years of service. Effective July 1, 2011, the average of three years of highest compensation in all of the years of service.

For Police and Police Command: AFC may include up to 75 unused sick days in lieu of a lump sum distribution. Effective July 1, 2009, AFC may include up to 125 unused sick days, up to 240 hours of compensatory time, and up to 244 hours of vacation time in lieu of a lump sum distribution. For those hired on or after July 1, 2011, no sick time, compensatory time, or vacation time may be included in AFC.

For Fire: AFC may include up to 25 twenty-four (24) hour unused sick days in lieu of a lump sum distribution. For those hired on or after July 1, 2011, AFC may include up to 240 hours of sick time, compensatory time, or vacation time.

Normal Form of Payment

Accrued Normal Retirement Benefit payable for life, with 60% continuing to the eligible spouse upon death of participant. Alternatively, member may elect an actuarially equivalent 100% or 50% survivor benefit.

Vesting

Eligibility:
Termination of employment with 10 or more years of credited service.

Annual Benefit:
Accrued Normal Retirement benefit at date of termination payable upon application on or after the date the member would have been eligible to retire had employment continued.

Duty Disability Retirement

Eligibility:
No minimum service requirement.

Annual Benefit:
Prior to age 55, benefit is 50% of AFC.

On or after attainment of age 55, Accrued Normal Retirement Benefit is payable based on years of service including credit for the period of receipt of a disability pension.

Non-Duty Disability Retirement

Eligibility:
5 years of service.

Annual Benefit:
Accrued Normal Retirement Benefit if disability occurs after age 55. Otherwise, 1% of AFC times years of service prior to age 55, increasing to 2% of AFC times years of service at disability date upon attainment of age 55.

Pre-Retirement Duty Death Benefit

Eligibility:
No minimum service requirement.

Annual Benefit:
An amount equal to that paid under the provisions of the Workers' Compensation Act payable to the spouse, children and/or dependents. This benefit continues during the lifetime of these recipients until the remarriage of the spouse, the attainment of age 18 of a child (or marriage, if earlier), or for as long as the Board determines the need exists in the case of other dependents.

Pre-Retirement Non-Duty Death Benefit

A member with 25 or more years of service may name a beneficiary to receive the 100% survivor benefit which would have been payable had the member retired the day before death.

If a member dies with at least 15 years of service and has not elected an option, the surviving spouse receives the benefit the member would have received had the member retired the day before death, elected the 100% option and nominated the spouse as beneficiary.

If a member with less than 15 years of service dies, salary deductions with interest (not to exceed 2% per annum) will be paid to the designated beneficiary, if any, or to the estate.

Annuity Withdrawal

Fire, Police and Police Command may, at retirement, elect to receive a partial or total refund of the member's total contributions (without interest). If such refund is elected, the member's retirement allowance is reduced actuarially using factors based upon the GA83 Male Mortality Table and interest equal to the PBGC interest rate in effect on July 1, or on last preceding the retirement date.

Workers' Compensation Offset

Any benefits payable from the retirement system may be reduced for benefits paid under the Workers' Compensation Act.

Member Contributions

Police – 5% of salary.
Police Command – 3% of salary.
Fire – 5% of salary, effective August 1, 2007.

Deferred Retirement Option Plan (DROP)

Eligibility – *Effective January 11, 2007 for Police Officers and August 21, 2007 for Firefighters:* Eligible for Normal Retirement or 25 years of service.

Benefit – 100% of the member's accrued benefit at the date of DROP is deposited into an account that receives 5% compound interest annually while the member remains an active member. No member contributions are made while in the DROP and no additional retirement benefits are earned. Employer contributions will include payroll of DROP participants and are not credited to members' accounts. Members may remain in the DROP for a maximum of 60 months (Effective July 1, 2009, 84 months for Police and Police Command) at which time they begin receiving the benefit accrued to the date of DROP into the program and elect an option of distribution of the DROP account (full lump sum, partial lump sum, rollover, lifetime annuity, leave funds in system).

After an employee attains thirty years of service, the allowed DROP participation period will be reduced by one month for every month beyond 30 years of service.

POLICE AND FIRE ACTIVE MEMBERS AS OF JULY 1, 2015
BY ATTAINED AGE AND YEARS OF SERVICE

Attained	Years of Service on Valuation Date						Totals	
Age	0-4	5-9	10-14	15-19	20-24	25-29	No.	Valuation Payroll
20-24	2						2	$ 80,130
25-29	14						14	617,350
30-34	10	5	3				18	1,099,435
35-39	6	4	8	2			20	1,477,220
40-44	2		4	4	7		17	1,415,477
45-49	1			2	9		12	1,095,291
50-54				1	1	1	3	247,451
55-59				1			1	92,708
Totals	**35**	**9**	**15**	**10**	**17**	**1**	**87**	**$ 6,125,062**

While not used in the financial computations, the following group averages are computed and shown because of their general interest. The amounts shown above do not include DROP members.

Age:	37.1 years
Service:	10.2 years
Annual Pay:	$70,403

POLICE AND FIRE ACTIVE MEMBERS
THREE-YEAR SUMMARY

	As of July 1st of the Indicated Year		
	2015	**2014**	**2013***
Active Members	87	77	74
Valuation Payroll	$ 6,125,062	$ 5,645,905	$ 6,016,818
Average Compensation	$ 70,403	$ 73,323	$ 81,308
Average Age (yrs.)	37.1	37.8	40.2
Average Service (yrs.)	10.2	10.9	14.6

* *Includes one year of pay growth at 3.5% and an additional year of service accrual.*

POLICE AND FIRE
INACTIVE MEMBERS AS OF JULY 1, 2015
TABULATED BY ATTAINED AGE

Attained Age	No.	Estimated Deferred Allowance
33	1	$28,930
Totals	**1**	**$28,930**

POLICE AND FIRE
DROP MEMBERS AS OF JULY 1, 2015
TABULATED BY ATTAINED AGE

	Totals	
Attained Age	No.	DROP Payment
44	1	$ 86,890
46	8	662,172
47	1	77,465
48	3	256,364
49	6	456,875
50	4	326,014
51	3	229,314
52	6	457,880
53	2	182,954
54	4	335,759
56	2	180,460
57	1	84,884
Totals	**41**	**$3,337,031**

Average Age at DROP: 46.8 years
Average Age as of 2015: 50.6 years

POLICE AND FIRE
RETIREES AND BENEFICIARIES AS OF JULY 1, 2015
TABULATED BY ATTAINED AGE

Attained Age	Totals No.	Totals Annual Allowances
41	1	$ 34,623
42	1	17,711
44	1	60,047
45	1	65,476
46	2	107,703
47	4	181,362
48	2	118,604
49	6	391,184
50	4	294,454
51	3	167,801
52	5	246,099
53	3	138,391
54	5	261,888
55	4	237,259
56	7	432,129
57	2	21,287
58	1	6,024
59	7	514,373
60	5	221,255
61	11	509,695
62	5	167,523
63	6	278,221
64	4	202,711
65	6	280,106
66	10	404,829
67	7	228,729
68	6	174,251
69	2	71,900
70	5	149,088
71	10	296,372
72	5	154,573
73	14	442,059
74	5	130,810
75	10	258,360
76	7	191,934
77	7	187,727
78	2	34,643
79	5	126,337
80 and over	18	343,144
Totals	**209**	**$8,150,682**

Average Age at Retirement: 48.1 years
Average Age as of 2015: 66.3 years

SECTION C
ASSUMPTIONS AND METHODS

ACTUARIAL ASSUMPTIONS

The rate of investment return (net of expenses) used was 7.0% per year, compounded annually. This assumption is used to discount the value of future payments.

The rates of salary increase used are in accordance with the following table.

This assumption is used to project a member's current salary over his or her future working lifetime.

Sample Ages	Base (Economic)	Merit and Longevtity	Annual Rate of Salary Increase
20	3.50 %	1.00 %	4.50 %
25	3.50	1.00	4.50
30	3.50	1.00	4.50
35	3.50	0.75	4.25
40	3.50	0.50	4.00
45	3.50	0.25	3.75
50	3.50	0.00	3.50
55	3.50	0.00	3.50
60	3.50	0.00	3.50

The mortality table used was the RP-2014 Blue Collar Healthy Annuitant Mortality Table for males and females, with 2-dimensional, fully generational improvements using the MP-2014 Mortality Improvement Scale (projected from 2014).

	Retirements in 2016			
	Actuarial Present Value of $1 Monthly for Life		Future Life Expectancy (Years)	
Sample Ages	Men	Women	Men	Women
40	$162.32	$165.45	44.48	47.93
45	157.51	161.42	39.37	42.74
50	151.38	156.29	34.40	37.67
55	143.78	149.85	29.61	32.76
60	134.53	141.67	25.04	27.99
65	123.24	131.29	20.71	23.39
70	109.91	118.57	16.67	19.02
75	94.56	103.69	12.96	14.99
80	77.89	87.21	9.70	11.41

The mortality assumption is used to measure the probabilities of members dying before retirement and the probabilities of each pension payment being made after retirement.

The rates of retirement are used to measure the probability of eligible members retiring during a given year and are shown below.

In the first year that an individual is eligible to participate in the DROP, 90% of such members were assumed to elect the DROP and 10% are assumed to retire (not elect the DROP). Following DROP election and participation, members are assumed to retire from active employment and commence benefits with the following probabilities:

Retirement Eligibility	Police and Police Command	Fire
1st year eligible	15 %	10 %
2nd year eligible	10	5
3rd year eligible	10	5
4th year eligible	10	5
5th year eligible	50	100
6th year eligible	75	100
7th year eligible	100	100

Rates of separation from active membership are used to measure the probabilities of members remaining in employment. These rates do not apply to members eligible to retire and do not include separation on account of death or disability.

Sample	Percent of Active Members Separating within the Next Year	
Ages	**Male**	**Female**
20	14.9 %	24.9 %
25	9.9	14.9
30	6.9	9.9
35	4.9	6.9
40	2.8	4.9
45	1.6	2.8
50	0.4	1.6
55	0.0	0.4
60	0.0	0.0
65	0.0	0.0

Sample rates of becoming disabled are as follows:

Sample	Percent of Active Members Becoming Disabled within the Next Year	
Ages	**Male**	**Female**
25	0.17 %	0.12 %
30	0.22	0.21
35	0.30	0.31
40	0.44	0.46
45	0.66	0.68
50	1.09	1.11
55	1.88	1.80
60	2.72	1.90

ACTUARIAL COST METHOD

An actuarial cost method is a procedure for allocating the actuarial present value of pension plan benefits to time periods. The method used for this valuation is known as the individual entry-age actuarial cost method and has the following characteristics.

(i) The annual normal costs for each individual active member, payable from the date of employment to the date of retirement, are sufficient to accumulate to the value of the member's pension at time of retirement.

(ii) Each annual normal cost is a constant percentage of the member’s year by year projected compensation.

The entry-age actuarial cost method allocates the actuarial present value of each member's projected benefits on a level basis over the member's compensation between the entry age of the member and the assumed exit ages.

The portion of the actuarial present value allocated to the valuation year is called the normal cost. The portion of the actuarial present value not provided for by the actuarial present value of future normal costs is called the actuarial accrued liability. Deducting accrued assets from the actuarial accrued liability determines the unfunded actuarial accrued liability.

ASSET VALUATION METHOD

Valuation Assets used for funding purposes are derived as follows: prior year valuation assets are increased by contribution and expected investment income and reduced by refunds, benefit payments and expenses. To this amount is added 20% of the difference between expected and actual investment income for each of the previous five years.

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

Marriage Assumption:	90% of participants are assumed to be married for purposes of death benefits. In each case the male was assumed to be 3 years older than the female.
Pay Increase Timing:	Beginning of year.
Decrement Timing:	Beginning of year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age of nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Benefit Service:	Exact fractional service is used to determine the amount of the benefit payable.
Active Member Group Size:	The number of active members was assumed to remain constant.
Adjustments:	Age and Service Retirement Present Values were adjusted by 5% to account for the additional amount included in the AFC due to unused sick time for all groups and an additional 5% for uniform allowance, compensatory time and vacation time for Police Patrol and Police Command groups.

SECTION D
FINANCIAL REPORTING

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date July 1,	Actuarial Value of Assets (1)	Actuarial Accrued Liability (AAL) (2)	Unfunded AAL (UAAL) (2 – 1)	Funded Ratio (Percent) (1)/(2)	Covered Payroll (3)	UAAL as a Percentage of Covered Payroll
1996	$ 58,355,463	$ 63,154,576	$ 4,799,113	92.40	$ 7,195,633	66.69 %
1997	64,112,309	67,138,675	3,026,366	95.49	7,487,978	40.42
1998	70,723,406	71,783,620	1,060,214	98.52	7,923,628	13.38
1999	78,903,103	76,216,724	(2,686,379)	103.52	8,500,123	(31.60)
2000	86,178,705	79,968,280	(6,210,425)	107.77	8,706,539	(71.33)
2001	91,879,860	84,734,677	(7,145,183)	108.43	9,112,748	(78.41)
2002	98,858,861	90,946,241	(7,912,620)	108.70	9,651,854	(81.98)
2003	92,930,343	91,993,127	(937,216)	101.02	9,650,586	(9.71)
2004	98,965,335	94,151,970	(4,813,365)	105.11	9,406,277	(51.17)
2005	113,426,227	103,382,549	(10,043,678)	109.72	9,693,623	(103.61)
2006	122,582,685	108,484,408	(14,098,277)	113.00	9,818,415	(143.59)
2007	131,679,408	114,822,112	(16,857,296)	114.68	10,421,556	(161.75)
2008	139,106,447	120,395,854	(18,710,593)	115.54	10,344,194	(180.88)
2009	143,886,459	130,566,593	(13,319,866)	110.20	10,401,824	(128.05)
2010	137,586,060	136,780,310	(805,750)	100.59	10,512,186	(7.66)
2011	139,124,010	153,317,413	14,193,403	90.74	8,126,002	174.67
2012	140,277,195	165,132,570	24,855,375	84.95	6,378,919	389.65
2013	141,640,217	170,563,168	28,922,951	83.04	5,668,970	510.20
2014	147,161,177	178,027,424	30,866,247	82.66	6,016,818	513.00
2015	161,610,610	184,191,055	22,580,445	87.74	5,645,905	399.94
2016	**173,126,280**	**196,234,325**	**23,108,045**	**88.22**	**6,125,062**	**377.27**

This information is presented in draft form for review by the System's auditor. Please let us know if there are any items that the auditor changes so that we may maintain consistency with the System's financial statements.

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Beginning July 1,	Computed Dollar Contribution	Actual Annual Contribution
2005	$ 301,308	$ 301,308
2006	0	0
2007	192,943	192,943
2008	348,426	348,426
2009	653,785	653,785
2010	1,754,731	1,754,731
2011	2,025,227	2,025,227
2012	2,368,862	2,368,862
2013	2,585,170	2,585,170
2014	2,822,883	2,822,883
2015	2,343,614	N/A
2016	2,511,017	N/A

This information is presented in draft form for review by the City's auditor. Please let us know if there are any items the auditor changes so that we may maintain consistency with the City's financial statements.

SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Valuation Date	July 1, 2016
Actuarial Cost Method	Individual Entry Age
Amortization Method	Level Percent of Pay, 19 years, Closed
Asset Valuation Method	Market value with 5-year smoothing of gains and losses
Principal Actuarial Assumptions:	
Net Investment Return	7.0%
Projected Salary Increases	3.5% to 4.5%
Payroll growth	3.5%
Cost-of-living adjustments	Provided through Bonus Fund

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April 8, 2016

Mr. John J. Riley II
City Treasurer
City of Dearborn Heights
6045 Fenton
Dearborn Heights, Michigan 48127

Dear Mr. Riley:

Enclosed are 20 copies of the July 1, 2016 actuarial valuation report. We look forward to meeting with you and the Retirement Board to discuss the valuation report.

If you have any questions, please call me.

Sincerely,

Mark Buis

Mark Buis

MB:mrb
Enclosures