

May 11, 2018

The Administrative Committee
City of Dearborn Heights
Employees Retirement Plan
Dearborn Heights, Michigan

Dear Committee Members:

The purpose of the annual actuarial valuation of the City of Dearborn Heights Employees Retirement Plan as of July 1, 2018 (based on data as of July 1, 2017) is to:

- Compute the liabilities associated with benefits likely to be paid on behalf of current retired and active members of the Retirement Plan,
- Compare accrued assets with accrued liabilities to assess the funded condition of the Retirement Plan, and
- Compute the City's recommended contribution rate for the Fiscal Year beginning July 1, 2018.

This valuation has been conducted in accordance with generally accepted actuarial principles and practices. Data concerning active members, retirees, beneficiaries and assets was provided by the City. This data has been reviewed for reasonableness, but no attempt has been made to audit such information. The valuation was based on the provisions of the Retirement Plan as amended through July 1, 2017. The actuarial assumptions used in this valuation represent reasonable expectations of future experience under the Plan. This report was prepared under the direction of a member of the American Academy of Actuaries who meets the qualification standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,



Denise M. Jones

Senior Consultant



Sandra W. Rodwan

Member, American Academy of Actuaries

City of Dearborn Heights
Employees Retirement Plan

Actuarial Valuation as of July 1, 2018
(Based on Data as of July 1, 2017)

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Section One:
Valuation Summary



Purpose of Valuation

The purpose of the annual actuarial valuation of the City of Dearborn Heights Employees Retirement Plan as of July 1, 2018 is to:

- ❖ Compute the liabilities associated with benefits likely to be paid on behalf of current retired and active members of the Retirement Plan,
- ❖ Compare accrued assets with accrued liabilities to assess the funded condition of the Retirement Plan, and
- ❖ Compute the City's recommended contribution rate for the Fiscal Year beginning July 1, 2018.

Liabilities and Funded Condition of Retirement Plan

Accrued liabilities of the Retirement Plan as of July 1, 2018 were computed to be \$49,406,829. The funding value of accrued assets was \$40,186,550. The ratio of the funding value of accrued assets to accrued liabilities was 81.3%.

Funding Value of Assets

A smoothed market value of assets was used for the July 1, 2018 valuation. This method is the same as the method used for last year's valuation.

Computed City Contribution Rate

The City's normal cost contribution was computed to be \$574,882, or 11.69% of projected member payroll. The City's unfunded actuarial accrued liability was amortized over a period of 24 years and was computed to be \$516,633 or 10.51% of projected member payroll.

The City's total contribution for the Fiscal Year beginning July 1, 2018 is \$1,091,515, or 22.2% of projected payroll.

Retirement Plan Experience

The overall experience of the Retirement Plan during the year ended June 30, 2017 was less favorable than expected based upon the long-term assumptions. The primary source of the unfavorable experience was the number of retirements during the year.

Benefit Provision Changes

There were no changes in benefits for this valuation.

Assumption and Method Changes

The amortization period was changed from 25 years open to 24 years closed for this valuation.

Participant Data

Valuation Date Date of Data	<u>7/1/2018</u> <u>7/1/2017</u>	<u>7/01/2017</u> <u>7/01/2016</u>
Active Members	115	125
Active Member Payroll	\$4,715,751	\$5,021,936
Retirees and Beneficiaries	154*	154*
Annual Pensions	\$3,354,990	\$3,178,107
Inactive Vested Members	59	55
Estimated Annual Pensions	\$456,481	\$425,170

Financial Data

Valuation Date Date of Data	<u>7/1/2018</u> <u>7/1/2017</u>	<u>7/1/2017</u> <u>7/1/2016</u>
Smoothed Valuation Assets (Valuation Date)	\$40,186,550	\$39,711,438
Market Value of Assets (Data Date)	39,512,564	37,787,171

Conclusion

Retirement Plan benefits are being funded as they accrue in accordance with a sound level percent of payroll funding objective.

*Includes 6 alternate payees receiving benefits pursuant to Eligible Domestic Relations Orders.



Section Two:

***Actuarial Calculations –
Funding***



Computed Contribution Rates for The Year Beginning July 1, 2018

The normal cost can be viewed as the long-term on-going cost of the Retirement Plan.

Unfunded actuarial accrued liabilities as of July 1, 2017 were amortized as a level percent of active member payroll over a closed period of 24 years. The 24 year period was adopted by the General Government Pension Committee at the May 23, 2017 meeting.

Contribution Recommendation:

	<u>Dollars Based on Projected Payroll</u>	<u>Percents of Payroll</u>
Normal Cost		
Regular Retirement	\$474,626	9.66%
Pre-retirement Death	5,130	0.10
Disability	18,736	0.38
Withdrawal	76,390	1.55
Refunds	<u>0</u>	<u>0</u>
Total Normal Cost	\$574,882	11.69%
Member Portion	-	0.00
City's Computed Normal Cost	\$574,882	11.69%
Amortization Payment	516,633	10.51
City's Total Contribution	\$1,091,515	22.20%

City's Total Contribution for General - \$875,854

City's Total Contribution for Water - \$215,661

Unfunded Actuarial Accrued Liability

	<u>July 1, 2018</u>	<u>July 1, 2017</u>
Actuarial accrued liability	\$49,406,829	\$47,892,947
Assets allocated to funding	<u>40,186,550</u>	<u>39,711,438</u>
Unfunded actuarial accrued liability	\$9,220,279	\$8,181,509

Recommended City Contributions

Plan Year Beginning July 1	Recommended Contributions	Percent Contributed
1990	\$811,673	100
1995	520,934	100
2000	106,673	100
2001	0	100
2002	0	100
2003	355,408	100
2004	606,234	100
2005	620,316	100
2006	647,229	100
2007	831,528	100
2008	781,783	100
2009	809,693	100
2010	944,118	100
2011	736,081	100
2012	594,191	100
2013	587,546	100
2014	842,786	100
2015	782,306	100
2016	904,328	100
2017	1,005,503	
2018	1,091,515	

Results prior to 2002, by previous actuarial firm.

History of Assets and Accrued Liabilities

Valuation Date	Valuation Assets	Actuarial Accrued Liabilities	Funded Ratio	Unfunded Actuarial Accrued Liabilities
07/01/01	\$37,855,086	\$29,355,631	129.0%	\$(8,499,455)
07/01/02	40,008,468	30,990,667	129.1	(9,017,801)
07/01/03	34,543,090	32,352,969	106.8	(2,190,121)
07/01/04	33,166,549	33,982,504	97.6	815,955
07/01/05	34,359,640	35,619,913	96.5	1,260,273
07/01/06	35,819,056	36,448,512	98.3	629,456
07/01/07	37,356,601	37,508,250	99.6	151,649
07/01/08	40,043,901	39,009,275	102.7	(1,064,626)
07/01/09	42,356,542	42,075,942	100.7	(280,600)
07/01/10	42,247,687	43,786,452	96.5	1,538,765
07/01/11(a)	42,196,846	45,158,416	93.4	2,961,570
07/01/11(b)	42,196,846	41,514,594	101.6	(682,252)
07/01/12	41,579,297	42,003,563	99.0	424,266
07/01/13(c)	39,307,178	40,715,483	96.5	1,408,305
07/01/14	37,683,774	43,154,452	87.3	5,470,678
07/01/15	38,823,137	43,171,933	89.9	4,348,796
07/01/16(a)	39,883,705	42,878,687	93.0	2,994,982
07/01/16(b)	39,883,705	45,288,399	88.1	5,404,694
07/01/17	39,711,438	47,892,947	82.9	8,181,509
07/01/18	40,186,550	49,406,829	81.3	9,220,279

- (a) Before assumption changes.
(b) After assumption changes.
(c) After benefit changes.

Results shown throughout this report for years prior to 2003 were prepared by the previous actuarial firm.

Aggregate Gain/Loss – Year Ended June 30,

	<u>2018</u>	<u>2017</u>
UAAL ^a at start of year	\$8,181,509	\$5,404,694
Normal Cost	560,257	610,199
Interest accrual	541,538	357,740
Contributions	1,005,503	904,328
Expected UAAL before Changes	8,277,801	5,468,305
Change from amendments	None	None
Change from assumption revisions	None	None
Expected UAAL after Changes	8,277,801	5,468,305
Actual UAAL	9,220,279	8,181,509
Gain/(Loss)	(\$942,477)	(\$2,713,205)

^a Unfunded Actuarial Accrued Liability.

Actuarial Balance Sheet July 1, 2018

Actuarial Assets

Accrued Assets

Assets from plan's financial statements (market value)	\$ 39,512,564	
Funding Value Adjustment	673,986	
Actuarial Value of Assets		\$ 40,186,550
Actuarial Present Value of expected future contributions		
For normal costs	5,105,232	
For unfunded actuarial accrued liabilities	9,220,279	
		14,325,511
Total Actuarial Present value of Present and Expected Future Resources		\$ 54,512,061

Actuarial Present Values(Liability)

To retirees and beneficiaries		\$ 33,568,931
To vested terminated members		2,273,462
To active members		
Allocated to service rendered prior to valuation date		13,564,436
Allocated to service rendered after valuation date		5,105,232
Total Actuarial Present Value of Expected Future Benefit Payments and Reserves		\$ 54,512,061

Comments and Conclusion

Comment 1: The overall experience of the Retirement Plan during the year ended June 30, 2017 was less favorable than expected based upon the long-term assumptions. The primary source of the unfavorable experience was the number of retirements during the year.

Conclusion:

Retirement Plan benefits are being funded as they accrue in accordance with a sound level percent of payroll funding objective.

Section Three:

***Retirement Plan
Benefit Provisions***



Benefit Provision Summary

Membership

Any person employed on a full time basis by the City except policemen, firemen, 20th District Court Judges and City Council members taking office after 12/31/1998.

Regular Retirement

Eligibility

Water Supervisors, DPW Supervisors and all Court: Age 65 with 5 years of credited service or age 55 with 30 years of credited service.

General AFSCME, DPW, Water AFSCME, Dispatchers, Non-Union, Elected and Appointed: Age 65 with 5 years of credited service or age 55 with 25 years of credited service.

Inspectors: Age 65 with 5 years of credited service and age 60 with 30 years of credited service.

Benefit:

Inspectors: 2.5% of Average Monthly Compensation for each year of credited service up to a maximum of 30 years with a minimum benefit of \$8.00 for each year of credited service up to a maximum of 30 years.

Supervisors and Dispatchers: 2.5% of Average Monthly Compensation for each year of credited service up to a maximum of 30 years with a minimum benefit of \$8.00 for each year of credited service up to a maximum of 30 years. Supervisors retiring with 30 years of service receive an additional 5% of Average Monthly Compensation (AMC) for a maximum pension of 80% of AMC.

General AFSCME, Court, DPW, Water AFSCME, Non-Union, Elected and Appointed: 2.5% of Average Monthly Compensation for each year of credited service up to a maximum of 30 years with a minimum benefit of \$8.00 for each year of credited service up to a maximum of 30 years. Members receive an additional 1% of AMC for each year of credited service in excess of 30 years to a maximum of 80% of AMC.

Average Monthly Compensation

Dispatchers: One-sixtieth (1/60th) of the Employee's total earnings during the sixty (60) calendar months immediately prior to retirement or benefit determination date, excluding overtime and other fringes.

Court & Inspectors: The Employee's best 3 non-consecutive years of total earnings out of the last 5 years of service prior to retirement or benefit determination date, excluding overtime and other fringes

AFSCME, Elected Officials, Non-Union, DPW Supervisors and Department Heads: The Employee's best 3 years of total earnings excluding overtime and other fringes

Early Retirement

Eligibility:

Age 55 and 10 years of credited service.

Benefit:

Accrued Normal Retirement Benefits reduced ½% for each month by which benefit payments commence prior to age 62. Benefit is unreduced at age 60 with 30 years of credited service.

Disability Retirement

Eligibility:

10 years of credited service for Non-Duty, immediate for Duty Disability.

Benefit:

Accrued Normal Retirement Benefit is payable without reduction. Benefit is calculated using a minimum of 15 years of credited service for Duty Disabilities only. Benefit is offset for Workers' Compensation Benefits paid on account of such disability.

Vesting

Eligibility:

5 years of credited service.

Benefit:

Accrued Normal Retirement Benefit payable at age 65 or reduced amount payable commencing at age 55 or later. Reduction is ½% for each month by which benefit payments commence prior to age 65.

Pre-Retirement Death Benefit

A monthly benefit is payable to the spouse of a married Employee who has 10 or more years of credited service or who has met the age and service requirements for normal or early retirement. The amount of benefit is equal to 60% (reduced by ½% for each year or fraction that the spouse is more than 5 years younger than the employee) of the Employees' Accrued Normal Retirement Benefit reduced for payment prior to age 62.

Upon the death of an Employee on or eligible for a duty disability retirement, the surviving spouse and children under age 18 will receive monthly pensions equal in the aggregate to the benefit payable to the Employee prior to his death. Benefits will cease upon the remarriage of the spouse and attainment of age 18 by the children.

Normal Form of Payment

Upon the death of an Employee who retired under a normal or early retirement, the surviving spouse will receive a benefit equal to 60% (reduced by ½% for each year or fraction that the spouse is more than 5 years younger than the employee) of the normal or early retirement benefit the Employee was receiving.

Retiree Supplementary Benefit Program

A supplementary payment may be made to current and future retirees who have been retired for at least 5 full years. Retirees who had withdrawn from City employment with a vested deferred pension are eligible upon attainment of age 70. The maximum amount distributed annually is equal to the total average monthly benefits paid during the prior year. The allocation to individual retirees is based on a point system related to years of service at retirement and years since retirement. The distribution depends upon the existence of excess earnings.

Section Four:

***Actuarial Assumptions
And Methods***



Actuarial Assumptions

Economic Assumptions

(i) Interest Rate 7.0%

(ii) Salary Increases
Across-the-Board 4.25%

Sample Annual Rates of Salary Increase

Age	Percent Increase
20	4.25%
25	4.25
30	4.25
35	4.25
40	4.25
45	4.25
50	4.25
55	4.25
60	4.25
65	4.25

Demographic Assumptions

(i) Mortality

RP 2014 Healthy Annuitant
Mortality Table

Sample Ages	Future Life Expectancy (Years)	
	Men	Women
55	28.2	30.7
60	24.1	26.3
65	20.1	22.0
70	16.2	18.0
75	12.7	14.3
80	9.5	10.9

(ii) Termination of Employment

Service related rates for first five years of employment. Age-related rates for after first five years of employment

% of Active Members Separating in Year Following Attainment of Indicated Age

Sample Ages	Years of Service	% of Active Members Separating Within Next Year
ALL	0	20.00%
	1	15.00
	2	10.00
	3	8.00
	4	7.00
25	5 & Over	6.00
30		5.50
35		4.40
40		1.85
45		1.25
50		
55		1.25
60		1.25
65		1.25

(iii) Retirement Rates

Age related rates.

Age	% of Eligible Members Retiring In Year Following Attainment of Indicated Age	
	AFSCME and Supervisors	Others
55	15%	5%
56	10	2
57	10	2
58	10	2
59	10	2
60	10	2
61	10	10
62	15	10
63	10	10
64	10	10
65	75	75
66	75	75
67	100	100
68	100	100
69	100	100
70	100	100

AFSCME and Dispatcher members were assumed eligible to retire at age 55 with 25 years of service or age 65 with 5 years of service.

Supervisor members were assumed eligible to retire at age 55 with 30 years of service or age 65 with 5 years of service.

Other members were assumed eligible to retire with 10 years of credited service. 100% of members age 60 with 30 years of service were assumed to retire.

Actuarial Method Used for the Valuation

Normal Cost. Normal cost and the allocation of actuarial present values between service rendered before and after the valuation date were determined using an individual entry-age actuarial cost method having the following characteristics:

- ❖ The annual normal costs for each individual active member, payable from date of hire to date of retirement, are sufficient to accumulate the value of the member's benefit at the time of retirement;
- ❖ Each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.

Financing of Unfunded Actuarial Accrued Liability. Unfunded actuarial accrued liability was amortized as a level percent of payroll over a closed period of 24 years, as adopted by the General Government Pension Committee on May 23, 2017.



Section Five:
Valuation Data



Asset Summary

As of June 30, 2017, the market value of assets was reported to be \$39,512,564. The projected funding value of assets (smoothed market value), as of June 30, 2018, was computed to be \$40,186,550.

Funding Value of Assets

A. Preliminary Actuarial Value June 30, 2016	\$39,312,896
B. Market Value June 30, 2017	39,512,564
C. Market Value June 30, 2016	37,787,171
D. Non-Investment Net Cash Flow	(2,482,297)
E. Investment Income	
E1. Market Total B – C – D	4,207,690
E2. % Return	11.51%
E3. Amount for Immediate Recognition (7%)	2,665,022
E4. Amount for Phased-In Recognition: E1 – E3	1,542,668
F. Phased-In Recognition of Investment Income	
F1. Current Year: 0.20 x E4	308,534
F2. First Prior Year	(632,371)
F3. Second Prior Year	(202,273)
F4. Third Prior Year	703,087
F5. Fourth Prior Year	157,560
F6. Total Phased-In Amount	334,537
G. Preliminary Funding Value June 30, 2017: A+D+E3+F6	39,830,158
H. Difference Between Market and Funding Value: B – G	(317,594)
I. Rate of Return Based on Smoothed Method	7.88%
J. Expected Contributions in Year Ended June 30, 2018	1,005,503
K. Expected Benefit Payments in Year Ended June 30, 2018	3,354,990
L. Expected Net Earnings in Year Ended June 30, 2018	2,705,879
M. Actuarial Value of Assets as June 30, 2018	
G + J – K + L	\$40,186,550

Retiree Supplemental Benefit Fund

1. Assets as of June 30, 2017	\$1,079,230
2. Additional Contributions:	
a. Estimated Market Rate of Return for Prior Year	11.51%
b. Internal Fund Net Earnings	112,805
c. Market Value of Total Plan Assets as of June 30, 2017	39,512,564
d. Excess Earnings Percent (2.a – 9%, maximum 1%)	1.0%
e. Additional Contributions Due to Excess Earnings	395,126
3. Total Retiree Supplemental Benefit Disbursements 2017:	\$170,000
4. Total Retiree Supplemental Benefit Disbursements for 2018:	
a. Total Benefit Payments for the Prior Year	3,202,103
b. Total Retiree Supplemental Benefit Payments for 2018: 4.a / 12	266,841
5. Assets as of June 30, 2018:	
1. + 2.b + 2.e – 3. (maximum of 4.b x 15)	\$1,417,161

Participant Summary

Retirees and Beneficiaries Included in the Valuation

There were 160 retirees and beneficiaries included in the valuation, with annual pensions totaling \$3,354,989. This includes 6 alternate payees receiving benefits pursuant to Eligible Domestic Relations Orders. There were also 59 inactive vested members with estimated annual pensions of \$456,181 included in the valuation.

Pensions Being Paid Comparative Schedule

Valuation Date July 1,	No.	Annual Pensions	Average Pension	Discounted Value of Pensions	
				Total	Average
2002	119	\$1,337,451	\$11,239	\$12,740,823	\$107,066
2003	131	1,472,344	11,239	15,195,087	115,993
2004	130	1,495,311	11,502	15,391,165	118,394
2005	133	1,721,980	12,947	17,841,644	134,148
2006	129	1,700,360	13,181	17,277,271	133,932
2007	125	1,731,940	13,856	17,489,485	139,916
2008	127	1,709,795	13,463	17,021,249	134,026
2009	122	1,681,429	13,782	16,735,507	137,176
2010	126	1,821,269	14,455	18,194,658	144,402
2011	128	1,883,236	14,713	17,097,937	133,578
2012	148	2,749,385	18,577	26,906,474	181,801
2013	154	2,887,156	18,748	28,279,223	183,631
2014	161	3,205,096	19,907	31,479,197	195,523
2015	156	3,176,268	20,361	30,484,198	195,412
2016	155	3,147,340	20,305	30,177,065	194,691
2017	154	3,178,107	20,637	31,926,616	207,315
2018	154	3,294,527	21,393	33,568,931	217,980

Summaries of Retired Members and Survivors
Data as of 6/30/2017
Tabulated by Attained Age of Recipient

Attained Age	Service		Disability		Survivors		Totals	
	No.	Annual Pensions	No.	Annual Pensions	No.	Annual Pensions	No.	Annual Pensions
50-54	5	\$155,905	1	\$10,915		\$0	6	\$166,820
55-59	5	167,688	1	15,127	2	29,289	8	212,104
60-64	24	819,438			2	30,354	26	849,792
65-69	32	828,454			1	13,023	33	841,477
70-74	24	456,729			3	54,576	27	511,305
75-79	17	386,820	1	6,524	1	6,408	19	399,752
80-84	10	104,438	2	18,292	5	42,345	17	165,075
85-89	8	79,886			4	18,524	12	98,410
90-94	<u>2</u>	<u>13,261</u>			<u>4</u>	<u>36,531</u>	<u>6</u>	<u>49,792</u>
Total	127	\$3,012,619	5	\$50,858	22	\$231,050	154	\$3,294,527

*Excluding 6 Alternate Payees receiving benefits pursuant to Eligible Domestic Relations Orders.

Inactive Members - June 30, 2017

<u>Age</u>	<u>No.</u>	<u>Estimated Annual Pensions</u>
34	1	\$6,570
36	3	18,433
37	2	16,935
38	2	21,769
40	1	6,288
41	3	25,062
42	2	14,889
44	2	5,781
46	2	15,637
47	1	3,824
48	1	9,642
50	3	38,977
51	5	28,063
52	5	29,603
53	2	17,675
54	3	27,710
55	2	32,279
57	1	11,886
58	3	23,504
59	3	15,780
60	3	23,786
61	2	13,191
62	1	4,899
63	2	17,520
64	1	8,510
65	2	12,518
66	<u>1</u>	<u>5,750</u>
Totals	59	\$456,481

**Active Members - June 30, 2017
Age and Service Distribution**

Attained Age	Service							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	Over 30	No.	Payroll
20-24	1							1	\$12,733
25-29	6	2						8	304,987
30-34	5	3	3					11	371,358
35-39	5	2		3				10	433,185
40-44	3	3	3	6	2			17	765,995
45-49	4	1	1	5	4	1		16	694,580
50-54	9	3	3	2	3	4	1	25	1,026,634
55-59	4	0	4	2	4		3	17	656,221
60-64		3	2	3		1		9	415,260
70-74	1							1	34,798
Totals	38	17	16	21	13	6	4	115	\$4,715,751

Group Averages:

Age: 46.4 years
Service: 11.9 years
Annual Pay: \$41,007

Active Members – Three-Year Summary

	Data as of July 1,		
	2017	2016	2015
Active Members	115	125	125
Valuation Payroll	\$4,715,751	\$5,021,936	\$5,014,815
Average Compensation	\$41,007	\$40,175	\$40,119
Average Age (yrs.)	46.4	46.2	45.4
Average Service (yrs.)	11.9	12.8	11.7